DOCUMENT RESUME

ED 438 474 CE 079 812

TITLE	Blended Instruction: Integrating the Curriculum through Projects and Curriculum Alignment.
INSTITUTION	Maryland State Dept. of Education, Baltimore. Div. of Career Technology and Adult Learning.
PUB DATE	1999-00-00
NOTE	100p.
AVAILABLE FROM	Maryland State Dept. of Education, Career and Technology Education Instructional Branch, 200 W. Baltimore St., Baltimore, MD 21201. Tel: 410-767-0518. Web site: http://www.msde.state.md.us.
PUB TYPE	Guides - Classroom - Teacher (052)
EDRS PRICE	MF01/PC04 Plus Postage.
DESCRIPTORS	Academic Education; Career Development; *Career Education; *Curriculum Development; *Education Work Relationship; *Educational Planning; High Schools; *Integrated Curriculum; State Curriculum Guides; Vocational Education; *Workshops
IDENTIFIERS	*Maryland

ABSTRACT

"Blended instruction" is an approach to integrating high school curriculum around broad career clusters or areas of student interest and study. Blended instruction is intended to engage students in more challenging assignments, increase attendance, and increase student academic and technical achievement. This Maryland guide contains materials to help instructors lead workshops to develop blended instructional curriculum with teachers. The guide contains the following eight sections: (1) an agenda and information on how teachers can obtain inservice credit; (2) overhead transparency masters for an introduction to designing integrated projects; (3) information on designing integrated projects, including participant instructions, a sample completed project report, integrated project report forms, and an integrated project plan rubric; (4) sample technical skill standards (for business, management, and finance); construction and development; consumer service, hospitality, and tourism; health and bioscience; and information technology; (5) the dimensions of learning and blended instruction; (6) assessing student achievement; (7) school team planning and action plan; (8) resource materials (sample project summary, mini-grants announcement, resource list for technical skill standards, career connections fact sheet, career connections, local labor market teams list, map). (KC)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 438 474

Blended Instruction: Integrating the Curriculum through Projects and Curriculum Alignment

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

L Gillis

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

CE079812

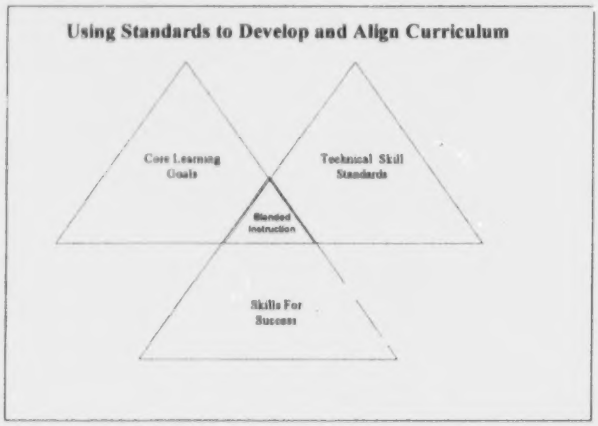
BEST COPY AVAILABLE

Blended Instruction: Integrating the Curriculum through Projects and Curriculum Alignment

Blended Instruction is one approach to integrating high school curriculum around broad career clusters or areas of student interest and study. The benefits of integrated instruction are well documented in terms of engaging students in more challenging assignments, increasing attendance, increasing student academic and technical achievement and other indicators of successful teaching and learning. While *Blended Instruction* as a process for developing and delivering integrated instruction produces similar results, it has added benefits including:

- ✓ Ensuring academic and technical rigor by using a standards-driven development and assessment process;
- ✓ Providing an instructional strategy that facilitates student mastery of more challenging academic and technical course content; and
- ✓ Supporting teaching and learning in the context of career clusters, academies and other forms of school restructuring.

The *Blended Instruction* process encourages teams of secondary academic and career and technology education teachers, school administrators, industry partners, postsecondary educators and others to work together in developing *Blended Instruction* projects and/or in aligning curriculum around a career cluster. *Blended Instruction* projects ensure academic rigor and relevance by integrating the Maryland High School Core Learning Goals in English, mathematics, science and social studies, Skills for Success and technical skill standards into curriculum. Teachers are encouraged to use project plans as they are or to expand or adapt them to fit their curriculum needs.



As an instructional strategy, *Blended Instruction*, provides challenging assignments that interest and motivate students because they are relevant to the student's career interests and/or program of study. When designed around existing career clusters or school academies, *Blended Instruction* enhances and supports school efforts to have students more focussed on a challenging program of study.

Although projects may integrate many subject areas, they all center on linking at least one core academic discipline (English, mathematics, science and social studies) and one of the ten career clusters identified as critical to Maryland's economic development. To date, teams have developed projects in the following career clusters:

- ➢ Manufacturing, Engineering Technology;
- ➢ Environmental, Agricultural and Natural Resources;
- ➢ Health and Biosciences;
- ➢ Business, Management and Finance; and
- ➢ Information Technology.

In the next year, teams will develop new projects related to other career clusters including Arts, Media and Communication.

For more information on upcoming *Blended Instruction* workshops or for a copy of projects developed by teachers in Maryland, please contact Pat Mikos, Staff Specialist at the Maryland State Department of Education at 410-767-0635.

BEST COPY AVAILABLE

Table of Contents

1 **Agenda**
Inservice Credit

2 **Introduction to Designing Integrated Projects (Overheads)**

3 **Designing Integrated Projects**
- Participant Instructions
- Sample Completed Project Report
- Integrated Project Report Form (2)
- Integrated Project Plan Rubric

4 **Sample Technical Skill Standards**
- Business, Management & Finance
- Construction and Development
- Consumer Service, Hospitality & Tourism
- Health and Biosciences
- Information Technology

5 **Dimensions of Learning**
- What is Dimensions of Learning?
- Observing for Dimensions of Learning
- Blended Instruction and Dimensions of Learning

6 **Assessing Student Achievement**
- Glossary of Assessment Terms
- Consider the Trade-Offs/Chart 1
- Assessment Example
- Assessment Worksheet

7 **School Team Planning**
- School Team Planning Session Room Assignments
- Integration Action Plan

Work Session Evaluation Form

8 **Resource Materials**
- Easton High School Project Summary
- Mini-Grants Announcement
- Resource List-Technical Skill Standards
- Career Connections (CC) Fact Sheet
- CC Local Labor Market Teams and Map

BEST COPY AVAILABLE

1

CAREER CONNECTIONS WORK SESSION ON BLENDED INSTRUCTION

February 10, 1999

STRAND ONE: DESIGNING INTEGRATED PROJECTS

Agenda

Strand One teams will learn a process for designing projects that integrate academic and industry standards. Team members will work with colleagues in their specific academic or occupational content area and selected career cluster for part of the day and with their school teams the remainder of the day.

WHAT	HOW	WHO	TIME
Registration and Refreshments		Conference Staff Participants	7:30 - 9:00 A.M.
Welcome and Overview of Career Connections	- Present - Clarify	Facilitators	9:00 - 9:15 A.M.
Teacher Inservice Credit and Grant Announcement	- Present - Clarify	Facilitators	9:15 - 9:20 A.M.
Introduction to Blended Instruction: Designing Projects	- Present - Clarify	Facilitators	9:20 - 9:50 A.M.
BREAK			9:50 - 10:05 A.M.
Designing an Integrated Project	- Present - Clarify - Brainstorm	Facilitators Resource Staff Work Groups	10:05 A.M. - 12:00 P.M.
LUNCH			12:00 Noon - 12:45 P.M.
Designing an Integrated Project (continued)	- Present - Clarify - Brainstorm	Facilitators Resource Staff Work Groups	12:45 - 1:30 P.M.
Assessing Student Achievement	- Present - Clarify - Brainstorm	Facilitators Resource Staff Work Groups	1:30 - 2:15 P.M.
Sharing Project Designs	- Present - Clarify	Facilitators Resource Staff Work Groups	2:15 - 3:00 P.M.
School Teams: Planning Next Steps/Evaluation	- Discuss	Facilitators School Teams	3:00 - 4:00 P.M.

Maryland State Department of Education (MSDE)
2000 Work Sessions on Blended Instruction
MSDE Inservice Credit
for Middle and Secondary Teachers and Administrators
Summary of Learning Outcomes

In order to receive MSDE inservice credits for your participation in the Work Sessions on Blended Instruction, you will need to:

- ❑ Write a brief summary of how you incorporated what you learned during one or two of the seven sessions offered by MSDE into your classes between Fall of 1997 through Fall of 2000, as outlined below (the dates of the sessions were March 7, May 19, November 5, 1997, April 21, 1998, February 25, 1999; April 13, 1999 and February 10, 2000);

- ❑ Document any blended instruction activities you implement in your classes as a result of your participation in the workshops by completing the attached "Blended Instruction Activity Description Form." Only one form for each project/activity needs to be completed; teachers who work in teams to develop projects/activities may submit copies of the same description along with their individual "Summary of Learning Outcomes." The descriptions will be compiled and shared among the Work Session participants; and

- ❑ If applicable, document curriculum alignment you participated in with other faculty (academic and occupational) using the attached matrix (teams of teachers may submit copies of the same matrix that reflects the alignment of their curricula).

In order to receive 2 inservice credits: *you must have attended one session, and developed and incorporated a blended instruction project/activity into at least one of your classes, or aligned your curriculum around an industry-based theme during one grading period with at least one other teacher in an occupational field (if you are an academic teacher) or an academic area (if you are an occupational teacher).*

In order to receive 3 inservice credits: you *must have attended two sessions, and developed and incorporated a blended instruction project/activity into at least one of your classes, and aligned your curriculum around an industry-based theme during one grading period with at least one other teacher in an occupational field (if you are an academic teacher) or an academic area (if you are an occupational teacher).*

The summary must include:

- the dates you attended the Work Session(s) on Blended Instruction;
- a description of your project;
- a listing of the Core Learning Goal(s), including Skills for Success, and technical skills standard(s) you integrated into your project or activity;
- a listing of the disciplines of the other faculty involved in the development and implementation of the project or curriculum alignment;
- a description of the planning process you and your colleagues used in the development of the

project or curriculum alignment;

- a description of the industry-based theme selected for the alignment of curriculum;
- a description of what you learned during the workshops that you brought back to your classrooms; and
- an explanation of how you incorporated what you learned into your classes. Be sure to include answers to the following questions:

1. How did you present the blended instruction project or curriculum alignment to your students?
2. How did you incorporate it into your curriculum?
3. What difficulties did you encounter as you integrated the project or curriculum alignment? Please describe.
4. How did your students respond to the project or curriculum alignment?
5. How did you assess your students' mastery of the standards as demonstrated in the project or activity?
6. What have your students learned from the experience?
7. How will you continue to incorporate the project or alignment of curriculum in future classes?
8. How will you and the faculty members you collaborated with continue to work together to develop blended instruction activities?
9. What are your plans to work with other faculty to integrate academic and technical standards?
10. How did you evaluate the effectiveness of the project?

Please submit the summary and the completed activity description form by **December 31, 2000** to:

Nina S. Roa, Career Technology Education Specialist
Career and Technology Education Instructional Branch
Maryland State Department of Education
200 W. Baltimore Street
Baltimore, Maryland 21201
Telephone: (410) 767-0172: Fax: (410) 333-2099

Maryland State Department of Education

1997-2000 Work Sessions on Blended Instruction

MSDE Inservice Credit

For Middle and Secondary Teachers and Administrators

Blended Instruction Activity Description Form

1) Title of blended instruction project or activity:

2) Grade (8^{th}, 9^{th}, etc):

3) Subjects (academic and career and technology education):

4) Overview of project (include list of activities):

5) Goal(s) of project:

6) Academic Core Learning Goals (Expectations and Indicators), Skills for Success Core Learning Goals (Expectations and Indicators), and technical skills standards incorporated into project:

7) Expectations of students (including final product):

8) Teaching strategies (i.e., cooperative learning, etc.)

9) Dimensions of Learning:

10) Criteria for judging student achievement:

11) Assessment strategies used to measure student achievement:

12) Duration of activity:

13) Teacher planning time:

14) Materials and resources (including human resources):

15) Roles of participating teachers (by discipline):

16) Names, titles, addresses, telephone, and fax numbers of project/activity developers (indicate name of person completing this form with an asterisk*):

17) Number of teachers who participated in the development of the project/activity:

____ a. English/Language Arts
____ b. Mathematics
____ c. Science
____ d. Social Studies
____ e. Foreign Language
____ f. Fine Arts
____ g. Career and Technology Education
Occupational Field _____
____ h. Other (*please identify*) _____

18) List other developers by role (e.g., business representatives, school administrators, postsecondary faculty, etc.)

_____

_____

Maryland State Department of Education

Blended Instruction: Integrating Maryland's High School Core Learning Goals, Skills for Success and Technical Skill Standards

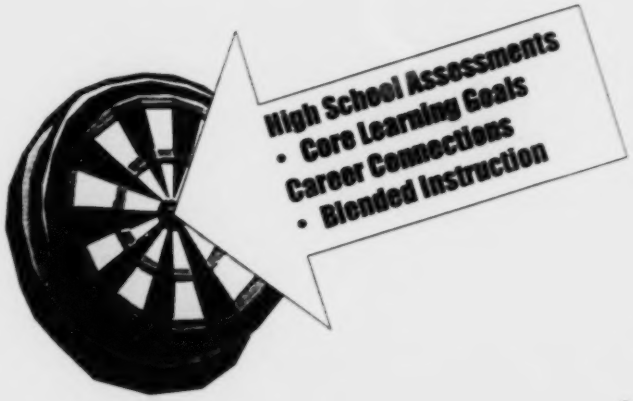
Strand 1 - 1

Imagine a High School Where Students ...

- **Prepare for college and careers**
- **Learn in the context of a career cluster**
- **Learn by doing--in classrooms, workplaces, and community service**
- **Achieve high levels of academic and technical skills**
- **Receive support from adult mentors**
- **Benefit from strong links between high schools and postsecondary institutions**

Strand 1 - 2

Improving Student Achievement



Strand 1 - 3

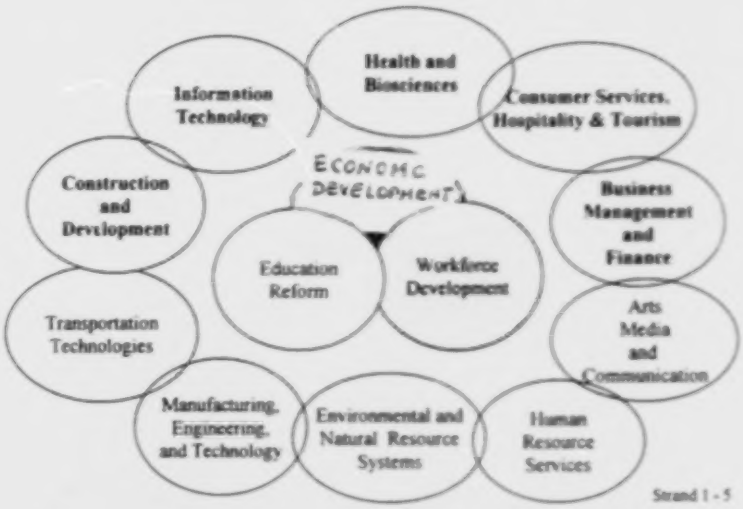
MSDE Resources for High School Improvement

- msde.state.md.us
- mdk12.org
- msp.msde.state.md.us

- MSDE Web Page
- Core Learning Goals
- H S A Items
- MSPAP Data
- Intervention Plan -- *Every Child Achieving*
- Minority Achievement Report

Strand 1 - 4

Career Connections: Linkages



Strand 1 - 5

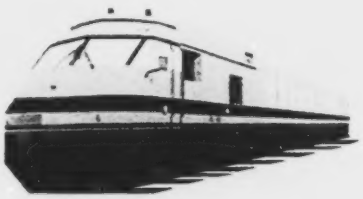
WHY INTEGRATE?

- ***Context promotes greater understanding of academic and technical concepts.***
- ***Students are motivated by curriculum that is relevant.***
- ***Exposes students to high level academics.***
- ***Rewarding for teachers.***
- ***Facilitates learning across the curriculum and all aspects of an industry sector.***

Strand 1 - 6

BEST COPY AVAILABLE

Thematic or Applied Approaches



A train leaves Chicago at 7:35 a.m…

- student works alone
- reads word problems or scenarios
- calculates and writes solution

Strand 1 - 7

Blended Instruction Projects

Student is on team of engineers designing the new path and/or station for the "people mover" in the Inner Harbor…

- students work in teams
- use technology
- solve real-world problems in a career context

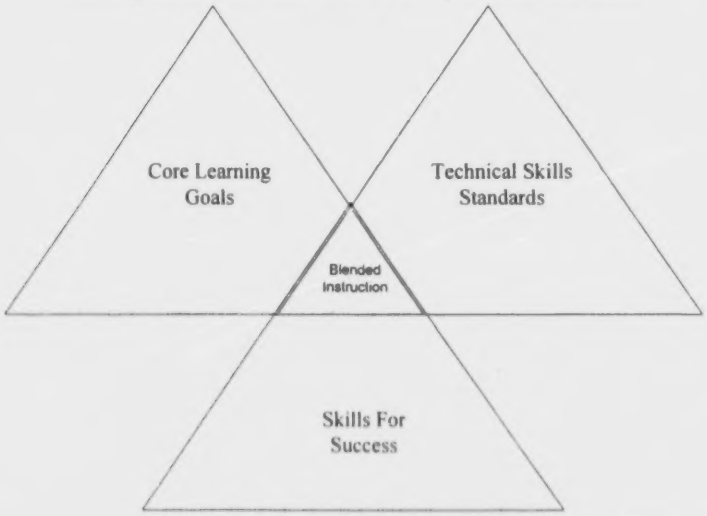
Strand 1 - 8

Goals of Blended Instruction

- **Increase student achievement**
- **Motivate students**
- **Link academic content to careers and real-world**
- **Way for teachers to work smarter, not harder**
- **Prepare students for the High School Assessments.**

Strand 1 - 9

Using Standards to Develop Curriculum



Strand 1 - 10

BEST COPY AVAILABLE

SOURCES OF STANDARDS

EDUCATIONAL STANDARDS

- ***High School Core Learning Goals: English, Mathematics, Science, Social Studies and Skills for Success--Learning, Thinking, Communication, Technology, and Interpersonal***

TECHNICAL SKILLS STANDARDS

- ***22 Industry Projects completed***
- ***16 Economic Sectors***
- ***State Standards***

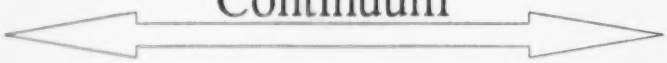
Strand 1 - 11

WORKSHOP OBJECTIVES

- ***Learn a model process for integrating CLGs, SFS and technical standards into instruction.***
- ***Design a standards-based integrated project.***
- ***Develop an assessment strategy that measures student progress.***
- ***Assess the quality of your integrated project.***
- ***Plan next steps with your school team.***

Strand 1 - 12

Types of Integrated Instruction Continuum



Thematic Curriculum	Blended Instruction Projects	B.I. Curriculum Alignment
• Single course or teacher	• Team (Aca. + CTE) must work together	• Several teachers w/in grade level
• Incorporate applied strategies or focus on theme	• Focus on joint projects and products	• Align curriculum by grading period, focus on common themes
	• Reinforce academic and technical skill standards	

Strand 1 - 13

CREATING A BLENDED INSTRUCTION PROJECT

- *Form teams by career cluster--academic and occupational teachers, guidance counselors, business partners and postsecondary partners.*
- *Review High School Core Learning Goals and technical skills standards.*
- *Develop rich, complex, integrated scenarios.*
- *Design strategies to assess student achievement.*
- *Evaluate and modify as needed.*

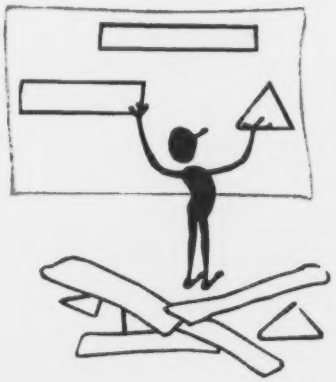
Strand 1 - 14

BEST COPY AVAILABLE

Implementing Blended Instruction Projects

Next Steps

- Working in Teams
- Time for Planning
- Time for Implementing
- Coordinating Work-Based Learning Opportunities



Strand 1 - 15

1 Career Connections Work Session on Blended Instruction
Strand One - Designing Integrated Projects
February 10, 2000

DESIGNING INTEGRATED PROJECTS

Participant Instructions

You will be designing integrated projects using academic and technical skills standards. Your work group is defined by an academic and career cluster, such as English with Health/Biosciences, therefore, you will be addressing standards primarily in those areas. A facilitator will help you with the process described below for designing an integrated project.

Overview of the Work Session: Strand One Tasks
9:00 A.M. - 3:00 P.M.

- Design an integrated project that incorporates academic standards from Maryland's High School Core Learning Goals (CLGs), Skills for Success (SFS), and technical skills standards provided in the "Sample Technical Skills Standards for Selected Career Clusters" document.
- Design an assessment strategy that measures student mastery of the CLGs, SFS, and technical skills standards imbedded in one activity of your project.
- Review the Integrated Project Plan Rubric to assess your integrated project design.
- Present your integrated project plan to the other groups in your room for their feedback.
- Use the Integrated Project Plan Rubric to provide feedback to other groups on their integrated projects.
- Incorporate feedback from the other groups to improve your integrated project plan.
- Share your group's project plan with your school team members during the school-based planning session.

Step 1: Review examples of integrated projects
9:00 A.M. - 12:00 Noon and 12:45 P.M. - 1:30 P.M.
(BINDER SECTIONS 3 & 4)

- Review the completed example of the English/Health Bioscience integrated project provided for you in your binder. (**A set of completed integrated project reports will be handed out at the school team planning session between 3:00 and 4:00 P.M.**)
- Review the blank Integrated Project Report Form (2-sided) in your binder. Use this as a guide as you develop your group's project. A completed form must be handed in to the Facilitator at the end of the day.
- Refer to the "Sample Technical Skills Standards for Selected Career Clusters" in your binder to see a listing of technical skills standards for your group's career cluster.
- Select a recorder who will fill in the entire Integrated Project Report Form and turn it in at the end of the session to the room facilitator.
- Select a group reporter who will facilitate your group's discussion, record the group's ideas on the flip chart, and report to the large group.

BEST COPY AVAILABLE

Step 2: Design an integrated project using the set of technical skills standards listed in the "Sample Technical Skills Standards for Selected Career Clusters", the full set of High School Core Learning Goals (CLG) and Skills for Success (SFS) and the SFS Match Booklets.

9:00 A.M. - 12:00 Noon and 12:45 P.M. - 1:30 P.M.

(BINDER SECTIONS 3 & 4)

- Review with your work group, the technical skills standards for your career cluster, as well as the CLGs for your group's primary academic area (i.e. Information Technology/Math).
- With your group, brainstorm real-world scenarios or problems to be solved related to your career cluster that includes technical skills standards, CLGs and SFS.
- Use the fuller explanations of the CLGs/SFS, which contain the Indicators of Learning and Assessment Limits, in the complete set of High School Core Learning Goals/Skills for Success provided on your table to choose academic and skills for success standards for your group's project.
- Use the Skills for Success (SFS) Match Booklets to identify closely related academic and SFS standards.
- Develop a project that solves the real-world problem. Make sure it incorporates the set of three standards (core learning goals, technical skills standards and skills for success). Record the project on the Integrated Project Report Form.
- Use the Integrated Project Plan Rubric as you design your project to ensure that it meets the criteria for a high quality and rigorous project.

Step 3: Design an assessment of student mastery of the CLGs/SFS

1:30 P.M. - 2:15 P.M.

(BINDER SECTION 6)

- Review the Blended Instruction Assessment Glossary. It describes a range of assessment methods, such as open-ended questions, demonstrations, presentations, scenarios, and performance tasks.
- Consider the principles of assessment, such as authenticity, directness, validity, fairness, and feasibility (see pages 53-57 in the copy of the *Getting to Work Supplement #1, The Right Fit: A Practitioner's Guide for Choosing Among Alternative Assessments* on your table).
- Use the *Getting to Work Supplement #1, The Right Fit: A Practitioner's Guide for Choosing Among Alternative Assessments* as a resource.
- Reflect on "how will you know when a student has mastered a particular skill?"
- Use the criteria for effective assessment in integrated projects identified in the Integrated Project Plan Rubric.
- Select 1 activity that is included in your project and develop an assessment.
- Identify the CLGS/SFS and technical skills standards imbedded in the activity.
- Using the Blended Instruction Assessment Worksheet, identify and develop an assessment method(s) to measure those skills (at least one method should be for an individual student).
- As you develop the assessment, consider the following questions:

- ⇒ What is the purpose of this assessment?
- ⇒ What are the knowledge and skills to be measured?
- ⇒ Why do you think this assessment method is best suited to measure those knowledge and skills?
- ⇒ Is the method authentic or close to being authentic?
- ⇒ Is the method fair to all students?
- ⇒ Is this method feasible to administer?
- ⇒ Does the assessment meet the criteria outlined in the Integrated Project Plan Rubric?

- Incorporate your assessment strategies on your Integrated Project Plan Report Form.

Step 4: Share and receive feedback on your integrated project

2:15 P.M. - 3:00 P.M.

- Prior to reporting out, assess the quality of your integrated project using the Integrated Project Plan Rubric.
- If you are the group reporter:
  - ⇒ Make a three-minute presentation on your project;
  - ⇒ Describe the real-world scenario or problem to be solved;
  - ⇒ Describe 2-3 activities that students will complete as a result of the project.
  - ⇒ Record the feedback your group receives on the flip chart.
- As you listen to other groups, use the Integrated Project Plan Rubric to provide feedback to the other groups on the design of their projects.

Step 5: After all the groups present, use the feedback that was provided by the other groups to improve your integrated project

2:15 P.M. - 3:00 P.M.

- Refer again to the notes the reporter took on the flip chart.
- Review and discuss the feedback that was given to your group when your project was presented.
- Decide as a group how you might use this feedback to improve your project and incorporate these ideas on your Integrated Project Report Form.

Step 6: Turn in a completed copy of the Integrated Project Report Form

- If you are the recorder, turn in your white NCR copy of the Integrated Project Report Form to the room facilitator (keep the yellow copies).

Step 7: School Team Planning Session

3:00 P.M. - 4:00 P.M.

- Check in Binder Section 6 for your school-team planning room assignment.
- Work with your school-team to develop an action plan to implement blended instruction within your school. Use the Integrated Action Plan in Section 7 of the binder to record the team's work.

Career Connections Work Session on Blended Instruction
Sample Completed Integrated Project Report

Directions for Work Group Recorders: *Complete this form as a record of the blended instruction project designed by your work group.*

Career Cluster Area:	Health-Bio-Science
Primary Academic Discipline:	English

Title of Project:	The Health of A Nation – Controlling A Virus

Real world scenario or problem to be solved related to career cluster area: *(Group Brainstorm)*	In Maryland, and your local community, there has been an increase in the number of reported HIV and AIDS cases after a five year decline. As a health care worker (at a community health center), you must explain to the community potential reasons for the increase in cases. You must also explain transmission methods, rates of infection and the reporting procedures for infectious diseases (including HIV and AIDS).

Technical Skills Standards to be mastered by students: *(from Section 4 of notebooks)*	Health care workers will understand the legal responsibilities, limitations, and implications of their actions within the health care delivery setting. They will perform duties according to regulations, policies, laws, and legislated rights of clients.

Activities: List the activities that students will do as part of the scenario or problem to be solved. Each activity should be linked to an academic CLG and a SFS.	**Academic Core Learning Goal / Indicator / Expectation / Assessment Limits by #'s** *(Eng. Goal 1, Exp. 2, Ind. 5)*	**Skills For Success – Indicators of Learning Match** *(i.e.Goal 2– Think., Exp.4, Ind. 1)*
A Read The Andromeda Strain by Michael Crighton **B.** Be assigned a virus to research – HIV, and other infectious diseases **C.** Research how viruses are identified, isolated, contracted, spread and prevented **D.** Interview public health officials and health care providers about the virus under study. **E.** Compare and contrast various accounts of infectious disease outbreaks – fictional, non-fictional, tabloid, newspaper, interviews, TV scripts and medical newsletters. **F.** Investigate specific protocols for preventing the spread of disease. **G.** Develop a public health awareness campaign – newsletters, brochures and speeches.	**A/E. ENG: 1.2.5** –The student will extend or further develop meaning by explaining the implications of the text for the reader or contemporary society **Assessment Limit: 1.** Identifying ideas and issues of a text or across texts that may have implications for readers or contemporary society. **B/C/F. SCI: 3.6.2** – The student will investigate a biological issue and be able to defend their position on topics such as animal rights, drug and alcohol abuse, viral diseases (e.g., AIDS), genetic engineering, bioethics, biodiversity, population growth, global sustainability, or origin of life. (NT) **C/D/E. ENG 2.3.3** – The student will use a systematic process for recording, documenting, and organizing information. **G. ENG 2.2.2** – The student will Select and organize ideas for specific audiences and purposes.	• **SFS 2.4.1** - The student understand situations within which problems are found. • **SFS 3.2.1** - The student will gather information from a variety of sources, using appropriate skills, strategies, resources, and technologies. • **SFS 2.3.2** -- The student will frame questions, problems, and issues strategically in specific situations.

Expectations of Students (i.e. final product, service or capstone that relates to the above listed scenario or solves the real-world problem and has value outside the classroom):	√ Develop a public health awareness campaign √ Address multiple concepts, such as immunity, mutations and experimentation √ Analyze multiple sources of information and incorporate findings into a public health awareness campaign

BEST COPY AVAILABLE

Resources and Materials to be Used (including human resources):

- Literature and/or films--*The Andromeda Strain, And the Band Played On, Outbreak, The Hot Zone The Diary of the Black Plague*
- Computer access for writing reports and research using databases and the Internet
- Public health officials and health care providers to present their role in dealing with viruses

Roles of Participating Teachers and Post-secondary Educators (list by discipline):

- **Allied Health** and **Biosciences** teachers will introduce information on viruses, assign virus to be researched and direct students to appropriate research materials.

- **English** teachers will develop a suggested reading list with sample questions and co-develop, administer and evaluate student progress throughout the project.

Linkages to work-based learning and role of industry partners:

A panel of health industry representatives--research doctors, lab technicians, public health/hospice nurses and epidemiologist--will share with students their role in public health and in the event of an outbreak. An editor from a newsletter, paper or journal will also explain their role in a public health awareness campaign.

Timeline. How long will the project take?
(including teacher planning, student time in class and homework for students):

The project may take an entire semester or less to complete depending on the extent to which students must research.

Assessment strategies to determine student mastery of specific standards. What evidence will demonstrate the effectiveness of an activity and/or the project in promoting student achievement?

Students will be required to submit on-going reports of their research, a final oral report and final public awareness materials. Public health officials and health care providers will provide assistance and feedback to students on their final products (public health brochure).

1

Career Connections Work Session on Blended Instruction
Integrated Project Report Form

Directions for Work Group Recorders: *Complete this form as a record of the blended instruction project designed by your work group.*

Career Cluster Area: _____

Primary Academic Discipline: _____

Title of Project: _____

Real world scenario or problem to be solved related to career cluster area: *(Group Brainstorm)*
_____
_____
_____

Technical Skills Standards to be mastered by students: *(from Section 4 of notebooks)*
_____
_____
_____

Activities: List the activities that students will do as part of the scenario or problem to be solved. Each activity should be linked to an academic CLG and a SFS.	**Academic Core Learning – Indicators of Learning/Assessment Limits listed by #'s (*i.e. Eng. Goal 1, Exp. 2, Ind. 3/AL1)***	**Skills For Success – Indicators of Learning Match *(i.e. Technology Exp. 2, Ind. 3)***
A _____	• _____	• _____
_____	_____	_____
B _____	• _____	• _____
_____	_____	_____
C _____	• _____	• _____
_____	_____	_____
D _____	• _____	• _____
_____	_____	_____
E _____	• _____	• _____
_____	_____	_____
F _____	• _____	• _____
_____	_____	_____

Expectations of Students (i.e. final product, service or capstone that relates to the above listed scenario or solves the real-world problem and has value outside the classroom):
√ _____ √ _____
√ _____ √ _____

BEST COPY AVAILABLE

Resources and Materials to be Used (including human resources):

- _____
- _____
- _____

Roles of Participating Teachers and Post-secondary Educators (list by discipline):

- _____
- _____
- _____
- _____

Linkages to work-based learning and role of industry partners:

- _____
- _____
- _____

Linkages to Service Learning (if applicable):

- _____
- _____

Timeline. How long will the project take? (including teacher planning, student time in class and homework for students):

Teacher Planning:

Student Work:

Assessment strategies to determine student mastery of specific standards. What evidence will demonstrate the effectiveness of an activity and/or the project in promoting student achievement?

- _____
- _____
- _____

Dimensions of Learning Incorporated in the Project (check all that are imbedded in the project): Help students . . .

- ☐ Develop positive attitudes and perceptions about learning
- ☐ Acquire and integrate knowledge
- ☐ Extend and refine knowledge
- ☐ Use knowledge in a meaningful way
- ☐ Develop and use productive habits of mind

Additional considerations for implementing this Blended Instruction Project:

_____
_____
_____
_____

1

Career Connections Work Session on Blended Instruction
Integrated Project Report Form

Directions for Work Group Recorders: *Complete this form as a record of the blended instruction project designed by your work group.*

Career Cluster Area: _____

Primary Academic Discipline: _____

Title of Project: _____

Real world scenario or problem to be solved related to career cluster area: *(Group Brainstorm)*
_____
_____
_____

Technical Skills Standards to be mastered by students: *(from Section 4 of notebooks)*
_____
_____
_____

Activities: List the activities that students will do as part of the scenario or problem to be solved. Each activity should be linked to an academic CLG and a SFS.	**Academic Core Learning – Indicators of Learning/Assessment Limits listed by #'s (*i.e. Eng. Goal 1, Exp. 2, Ind. 3/AL1)***	**Skills For Success – Indicators of Learning Match *(i.e. Technology Exp. 2, Ind. 3)***
A _____	• _____	• _____
_____	_____	_____
B _____	• _____	• _____
_____	_____	_____
C _____	• _____	• _____
_____	_____	_____
D _____	• _____	• _____
_____	_____	_____
E _____	• _____	• _____
_____	_____	_____
F _____	• _____	• _____
_____	_____	_____

Expectations of Students
(i.e. final product, service or capstone that relates to the above listed scenario or solves the real-world problem and has value outside the classroom):

√ _____ √ _____
√ _____ √ _____

Resources and Materials to be Used (including human resources):

- _____
- _____
- _____

Roles of Participating Teachers and Post-secondary Educators (list by discipline):

- _____
- _____
- _____
- _____

Linkages to work-based learning and role of industry partners:

- _____
- _____
- _____

Linkages to Service Learning (if applicable):

- _____
- _____

Timeline. How long will the project take? (including teacher planning, student time in class and homework for students):

Teacher Planning:

Student Work:

Assessment strategies to determine student mastery of specific standards. What evidence will demonstrate the effectiveness of an activity and/or the project in promoting student achievement?

- _____
- _____
- _____

Dimensions of Learning Incorporated in the Project (check all that are imbedded in the project): Help students . . .

- ☐ Develop positive attitudes and perceptions about learning
- ☐ Acquire and integrate knowledge
- ☐ Extend and refine knowledge
- ☐ Use knowledge in a meaningful way
- ☐ Develop and use productive habits of mind

Additional considerations for implementing this Blended Instruction Project:

_____
_____
_____
_____

Career Connections Work Session on Blended Instruction
Integrated Project Plan Rubric

Project Criteria	*Level 3 (meets all criteria)*	*Level 2 (meets some criteria)*	*Level 1 (meets few or no criteria)*
1. Rigorous Standards ✓ Explicitly states project outcomes, e.g., expectations for students, including CLGs, SFS, technical skills standards. ✓ Requires students to master challenging academic and technical skills. ✓ Identifies the Dimensions of Learning addressed.	✓ Expectations for student learning include several CLGs, SFS, and technical skills standards. ✓ Students demonstrate mastery of grade-level or advanced academic and technical skills. ✓ All Dimensions of Learning are addressed.	✓ Expectations for student learning include few CLGs, SFS, and technical skills standards. ✓ Students demonstrate mastery of grade-level academic and technical skills. ✓ Some Dimensions of Learning are addressed.	✓ Expectations for student learning do not include at least one CLG, SFS, and technical skill standard. ✓ Students do not demonstrate mastery of grade-level academic and technical skills. ✓ D of L are not addressed.
2. Responsibilities ✓ Identifies and defines roles and responsibilities of project team members (academic teachers, CTE teachers, administrators, industry partners, postsecondary educators). ✓ Provides clear directions for activities to students and project team members.	✓ Roles/responsibilities of all team members are defined. ✓ Student and project team member activities are clearly specified.	✓ Roles/responsibilities of some team members are defined. ✓ Student and project team member activities are not clearly specified for each group.	✓ Roles/responsibilities of team members are not defined. ✓ Student and project team member activities are not specified.
3. Authentic Problems ✓ Addresses an authentic "real world" problem within a career context. ✓ Requires students to produce a final product or performance that has value outside of the classroom. ✓ Integrates technology as appropriate.	✓ The project addresses an authentic "real world" problem within a career context. ✓ Students produce a final product(s) or performance that may have value outside of the classroom. ✓ Student use technology appropriate for the career context.	✓ Project activities are limited in terms of authentic problems and/or are not based in a career context. ✓ Student product(s)are traditional "final reports". ✓ Student use of technology is limited or not in a career context.	✓ The project addresses an artificial problem and is not placed in a career context. ✓ Students do not produce a final product(s) or performance. ✓ Student use or advance their understanding of technology .
4. Resources ✓ Lists resources needed (material and human: such as, the Internet, books, microscopes, calculators, funds, transportation, industry representatives, etc.)	✓ Resources used include a range of sources (text, visual, technology-based, human resources) and are clearly outlined.	✓ Resources used are limited to a few sources and are not clearly outlined.	✓ Resources used are limited to one or two sources and are not clearly outlined.
5. Timelines ✓ Establishes appropriate time lines for teacher and student planning and implementation.	✓ Appropriate time lines for teacher and student work are outlined.	✓ Time lines for teacher and student work are not clear.	✓ Time lines for teacher and student work are not outlined.
6. Assessment ✓ Includes student self assessment. ✓ Incorporates a variety of methods including final product, performance, or demonstration. ✓ Specifies how individual and groups of students will be assessed. ✓ Involves assessment by industry or others from outside the classroom.* *may enhance quality of assessment, but is not essential	✓ Activity includes student input and self assessment. ✓ Activity includes several methods for assessing student product, performance or demonstration. ✓ Includes detailed description and criteria for individual and groups of students. ✓ Industry partners or others from the community participate in assessment.	✓ Project includes limited student input. ✓ A student product or performance is not included in the assessment. ✓ Industry/community partners do not participate in assessment.	✓ Project does not include student input. ✓ No student product or performance is included. ✓ No industry/community partners participate.

BEST COPY AVAILABLE

Sample Technical Skills Standards for Business, Management and Finance

- Business Education Standards
- General Business, Management and Finance

Business Education Standards -- Entrepreneurship

Business Education Standards:

- Identify unique characteristics of an entrepreneur and evaluate the degree to which one possesses those characteristics.
- Develop a marketing plan for an entrepreneurial venture.
- Apply economic concepts when making decisions for an entrepreneurial venture.
- Identify and use the necessary financial competencies needed by an entrepreneur.
- Identify, establish, maintain, and analyze appropriate records to make business decisions.
- Develop a management plan for an entrepreneurial venture.
- Describe how cultural differences, export/import opportunities, and current trends in a global marketplace can affect an entrepreneurial venture.
- Describe how ethics, government, and different forms of business ownership affect the entrepreneurial venture.
- Develop a business plan.

Resources--Publications and Web Sites

Entrepreneurship Teaching Strategies, Creative Teaching Ideas, Creative Teaching Ideas for International Business, Developing Leadership in Business Education, Internet User's Guide & Activities

Ewing Marion Kauffman Foundation
Entrepreneurship Education
The Entrepreneur Test
Entrepreneurmag
Entreworld

Business Education Standards -- International Business

Business Education Standards:

- Explain the role of international business and analyze its impact on careers and doing business at the local, state, national, and international levels.
- Apply communication strategies necessary and appropriate for effective and profitable international business relations.
- Describe the social, cultural, political, legal, economic factors that shape and impact the international business environment.
- Describe the environmental factors that define what is considered ethical business behavior.
- Explain the role, importance, and concepts of international finance and risk management.
- Address special challenges in operations and management of human resources in international business.
- Apply marketing concepts to international business.
- Relate balance of trade concepts to the import/export process.
- Identify forms of business ownership and entrepreneurial opportunities available in international business.

Resources--Publications and Web Sites

Business Education Forum, Class Acts, Creative Teaching Ideas, Creative Teaching Ideas for International Business, Do's and Taboos Around the World, Do's and Taboos of Preparing Your Trip Abroad, Do's and Taboos -- Three Volume International Set, The International Business Dictionary & Reference, The Portable MBA Desk Reference

Teaching URL's
International Economics Gateway
EconomicsAmerica

Business Education Standards -- Accounting

Business Education Standards:

- Complete the various steps of the accounting cycle and explain the purpose of each step.
- Determine the value of assets, liabilities, and owner's equity according to generally accepted accounting principles, explaining when and why they are used.
- Prepare, interpret, and analyze financial statements using manual and computerized systems for service, merchandising, and manufacturing businesses.
- Apply appropriate accounting principles to various forms of ownership, payroll, income taxation, and managerial systems.
- Use planning and control principles to evaluate the performance of an organization and apply differential analysis and present value concepts to make decisions.

Resources-- Publications and Web Sites

Business Education Forum, Class Acts, Creative Teaching Ideas, Internet User's Guide & Activities, The Portable MBA Desk Reference

Center for Research in Accounting Education
RAW's Accounting Resources on the Internet
South-Western College Publishing
Teaching URL's
Integrating Accounting Core Curriculum

General Business, Management and Finance

Banking (sales and service): The worker will handle cash transactions, provide non-cash assistance, and sell financial products and services. (Note: these services require knowledge of general banking principles, government regulations and ruling agencies, legislation and compliance requirements.

Banking (loan processing): The worker will communicate accurate loan information, understand lending regulations and will provide appropriate information and disclosures during an interview.

Management:

- Illustrate how the functions of management are implemented and explain why they are important.
- Analyze financial data influenced by internal and external factors in order to make long-term and short-term management decisions.
- Justify the need to gain and maintain competitive advantage through the use of internal comparisons and external research services.
- Describe the activities of human resources managers and their importance to the successful operation of the organization.
- Identify various organizational structures and discuss the advantages and disadvantages of each.
- Define a code of ethics, develop a code of ethics, and apply a code of ethics to various issues confronted by businesses.
- Identify, describe, and analyze the impact and relationship of government regulations and community involvement to business management decisions.
- Describe the role of organized labor and its influences on government and business.
- Apply generally accepted operations management principles and procedures to the design of an operation plan.

Marketing:

- Identify the roles of marketing and analyze the impact of marketing on the individual, business, and society.
- Identify and explain how external factors influence/dictate marketing decisions.
- Apply distribution processes and methods to develop distribution plans.

- Identify the four general forms of promotion and determine how each contributes to successful marketing.
- Develop, implement, and evaluate a marketing research project.
- Identify numerous marketing variables and strategies in dealing with a diversified marketplace.
- Develop a marketing plan encompassing all of the necessary components.
- Apply forecasting principles and methods to determine sales potential for specific products.

Information Systems:

- Describe current and emerging computer architecture; configure, install, and upgrade hardware systems; and diagnose and repair hardware problems.
- Identify, select, evaluate, use, install, upgrade, and customize application software; diagnose and solve problems occurring from an application software âs installation and use.
- Identify, select, evaluate, use, install, upgrade, customize, and diagnose and solve problems with various types of operating systems, environment, and utilities.
- Enter, sort, and retrieve data from databases; evaluate media and file structures; and plan, develop, and modify file specifications and database schema.
- Use, select, evaluate, install, customize, plan, design, and diagnose and solve problems with communications and networking systems.
- Use touch keyboarding skills to enter and manipulate text and data.
- Select and use word processing, desktop publishing, database, spreadsheet, presentation graphics, multimedia, and imaging software and industry-and subject-specific software.
- Plan the selection and acquisition of information systems.
- Analyze and design formation systems using appropriate development tools.
- Compare, evaluate, and demonstrate skills in the use of different types and levels of programming languages.
- Design and implement security plans and procedures for information systems.
- Establish and use a personal code of ethics for information systems use and management.
- Assess the impact of information systems on society.
- Select and apply information systems across the curriculum.
- Describe positions and career paths in information systems.

Sample Technical Skills Standards for Construction and Development

- Construction Craft Laborers (CCL)
- Electrical Construction

Construction Craft Laborers (CCL) -- Building Construction

The Construction Craft Laborer (CCL) is the most versatile worker in the construction industry. CCLs routinely perform major utility installation, hazardous material abatement, small and large scale building construction, and more. They sometimes perform all of this work for the same employer, often on a single construction project. For **Building Construction,** sample duties and tasks include: mix, handle, and place cementitious materials; excavate, place, and compact earth materials; cut, core, and break cementitious material; erect and maintain scaffolding; handle and stock building materials; remove, clean, and store formwork; cut and braze, using oxy-acetylene and plasma equipment; rig loads and signal operators in lifting and hoisting operations; clean and maintain work areas.

I. Find Level, Plumb, and Square

- CCLs lay out sites for all types of construction activities. They locate and mark where foundations will be placed, where walls will be formed and placed, where interior walls will be built, and where utilities and roads will be built.
- CCLs read prints that specify basic coordinates that must be used to locate the structure. Then they measure, mark, square, and stake locations.
- CCLs place forms, build scaffolds, place concrete, and install other types of materials that require materials to be built plumb, level, and square. The consequences of performing these tasks incorrectly are serious. A quarter-inch deviation on a foundation out of level, for example, can mean a difference of inches or feet by the time the structure is completed.

Mastery Performance

1. Given a construction site and a typical task, the worker will find plumb and level for a surface correct within the bubble (100% of the time).
2. Given a layout situation where worker must establish square, he or she will do so correctly within ± 1/4" (6 mm) of true.
3. Given any of the tools that a worker typically uses to establish square, plumb, and level including at least a laser, hand level, transit, plumb bob, builder's level, and transit, the worker will correctly set up and safely use all the tools and instruments to perform the work.

Teaching Suggestions

1. Demonstrate and explain ways to find square points in any type of layout situation using at least two methods for finding square.
2. Demonstrate and explain how to find plumb and level on all the tools typically used by a CCL.

3. Discuss and illustrate the problems associated with making an error in plumb, level, and square. Deal with the production and safety issues on all types of construction sites, including situations such as scaffolding, material storage, foundation layout, concrete placement, form construction, and other tasks.
4. Practice reading the instruments used for determining square, plumb, and level.

II. Estimate and Calculate the Amount of Materials Needed for a Task or Project

- CCLs estimate and calculate required amounts of concrete, brick, block, pipe, dirt, sealant, chalk, encapsulant, lumber, and other materials used in construction work. CCLs perform this task because they supply the materials for other CCLs, masons, plasterers, and carpenters.
- CCLs are expected to help ensure continued production by supplying materials in a timely fashion, prior to need. An over supply materials might have to be moved or stored. CCLs need to exactly match the production rate of workers during the day.
- When CCLs supervise work, they estimate materials required to finish any particular task, adjust material orders, and report the amount of work completed for billing by the employer.

Mastery Performance

1. Given a construction situation, a worker will describe a technique for finding or estimating amounts of material needed to complete the task. The estimate must be accurate within plus 1/2 yd (0.4 m) of dirt or concrete; plus 1/4 skid of brick or block; and plus 1 container of chalk, sealant, or encapsulant.
2. Given a situation where a worker must estimate the amount of materials needed to complete a task, the worker will estimate within ± two person loads of the material being supplied. This means, for example, four concrete blocks; fourteen bricks; three lengths of lumber; or 1/2 yd of concrete.

Teaching Suggestions

1. Review formulas for finding area and volume of spaces of all sorts, including how to break spaces into manageable size and shape areas to calculate amounts.
2. Describe situations and applications where CCLs must estimate amounts of materials for a task, both from the beginning of the task to completion.
3. Illustrate and explain the use of various formulas for calculating the amount of materials needed to complete a task.
4. Demonstrate and discuss shortcuts for estimating various materials (such as vertical forms and bricks) supplied by the worker.
5. Demonstrate and discuss estimating techniques commonly used on the job.
6. Discuss the importance of estimating materials correctly as well as how and when to use this skill.
7. Practice finding or estimating materials needed for sample tasks.

Electrical Construction --Inside Building Construction

The job description for an electrical construction worker (ECW) -- Inside, Building Construction -- includes the duties and tasks listed below.

I. PLANNING AND INITIATING PROJECT

- When planning a new project, an ECW must study blueprints and specifications.
- Materials, supplies and equipment must be ordered to complete the job.
- Materials and supplies must be loaded, hauled and unloaded at the job site.
- The ECW coordinates tool requirements with the contractor.
- The job schedule must also be coordinated with other crafts.
- At times the ECW establishes timetables and/or progress charts for completion of the work. It may be necessary to obtain clearances, such as for digging.

II. ESTABLISHING TEMPORARY POWER DURING CONSTRUCTION

- An ECW may need to maintain and repair a temporary power system as needed during construction.
- An ECW may determine temporary power requirements by consulting with other crafts.
- Temporary power needs may need to be coordinated with a local power company.
- The ECW may need to establish a temporary power source, set up temporary panel(s), and run lines for temporary power and lighting throughout the project.

III. ESTABLISHING GROUNDING SYSTEM

- The ECW positions the ground conductors and welds or mechanically connects them.
- An ECW studies blueprints to determine a plan for the grounding system.
- The location of the grounding conductors and connections must be laid out.

IV. INSTALLING SERVICE TO BUILDINGS AND OTHER STRUCTURES

- The ECW installs raceway supports and lays the conduit in the trenches with spacers, if needed. The conduit must be secured, reinforced and the inside swabbed, if needed.
- The location of the conduit stubups may be measured and determined.
- An ECW studies blueprints to determine where power will feed from the substation. The local power company may need to be contacted to determine the location of feeders. The location of other electrical conduit or other structures, such as water mains, must be determined.
- The ECW may need to compute the size of service entrance conductors needed.
- When the locations of the feeders are determined, the ECW lays out trenches for the conduit. The ECW digs trenches or coordinates trench excavation performed by others.
- An overhead service entrance may also be established.

V. PLANNING AND INSTALLING RACEWAY SYSTEMS

- An ECW must calculate the necessary bends, saddles and offsets needed to install conduit.
- The ECW must determine where to place the junction boxes. He or she measures where the conduit should land and the amount of conduit needed to complete the run.
- In preparing the conduit for use, the ECW must cut it to fit, file or ream the inside to make it smooth, and then bend it and thread it. After, the conduit must then be transported to the correct location.
- The ECW plumbs and levels the conduit and places the junction boxes where planned, making holes if needed and making sure the box is plumb and level.

- An ECW studies blueprints to determine the placement of the conduit. The number of wires/cables that can be put into each conduit must be determined. Holes may be cut in metal to run the conduit.
- An ECW may be required to cut holes in concrete to run conduit.
- An ECW may sometimes paint the conduit for identification.

VI. INSTALLING NEW WIRING AND REPAIRING OLD WIRING

- An ECW assembles all materials needed at the location for pulling the cable. Small conduit can be fished with fish tape or other means.
- The ECW cuts the length of wire or cable needed. The ECW sets up wire/cable reels for pulling.
- An ECW may examine and test existing wire.
- An ECW may be required to pull wire with a pulling machine. An ECW may swab the inside of large conduit to remove dirt or debris before pulling the wire.

IX. INSTALLING RECEPTACLES, LIGHTING SYSTEMS, AND FIXTURES

- An ECW studies blueprints to identify circuits. At times it may be necessary to work around other systems, such as air conditioning, to find a path for lighting and receptacle wiring.
- The ECW locates raceways for carrying wire, measures the wire needed for runs, then establishes homeruns from the panel box. The ECW must run raceway, cable or wire from the junction box.
- The ECW makes electrical connections in the fixtures and receptacles and places lamps in the lighting fixture. Switches must be located to control lighting and receptacles must be installed.
- The ECW may attached a lighting fixture to the ceiling. After installation, the ECW tests the lights and receptacles.
- An ECW may need to balance loads on various circuits. Other crafts may need to be consulted before making the final determination of locations for lighting systems.
- An ECW may make a panel directory. After the work is complete, complete "as built" drawings.

RELATED SKILLS (samples--not a complete list)

Technical Skill Requirements

- Knowledge of National Electrical Code, and state and local electrical codes;
- Knowledge of blueprints, including symbols used and schematic electrical diagrams;
- Knowledge of how to work with energized circuits;
- Knowledge of specific job safety rules (OSHA requirements) and of hazardous materials;
- Knowledge of the principles of grounding;
- Knowledge of different conduit bends (saddle, offset, etc.);
- Knowledge of connections to be made for various transformers;
- Knowledge of which wire/cable to use in different circumstances;
- Knowledge of parallel circuits, combination circuits and series circuits;
- Knowledge of circuit breaker ratings, transformer ratings, and fuse ratings;

Sample Technical Skills Standards for Consumer Service, Hospitality and Tourism

- Consumer Service -- Retail Trade (Sales Associate), Cosmetology
- Hospitality & Tourism -- Front Desk Clerk, Hospitality Business Alliance

Consumer Service -- Retail Trade (Professional Sales Associate)

The **Professional Sales Associate** is able to provide product information and services that result in customer purchases, loyalty, and satisfaction. The associate also takes personal responsibility for achieving workgroup and organizational objectives and has a thorough knowledge of the company's and competing product lines. The Professional Sales Associate supports his or her efforts by completing housekeeping, stockkeeping, and paperwork as assigned. And may have responsibility for such functions as cashiering, merchandise display, stock, handling, complaints, and training new sales personnel.

Module I: Provide Personalized Customer Service

- Initiate customer contact and determine customer's needs by listening and asking questions in order to make shopping experience enjoyable for customer;
- Direct customer to additional services such as delivery, alterations, gift wrap or refer customer to another department/store;
- Build customer relations by follow through on commitments made to customers and responding to personal needs of customers;
- Honor manufacturers' warranties, adhere to company's return policy, and handle customer complaints;
- Balance responsive phone service with in-store service;
- Maintain key information on customers and conduct customer follow-up.

Module 2: Sell and Promote Products

- Determine customer needs--listen and ask open-ended questions;
- Acquire and apply product knowledge and verify product is appropriate for customer use;
- Request product feed back from customer and handle customer objections;
- Sell customer additional or related merchandise, offer alternative sales options and motivate customer to return for future purchases;
- Review current advertising and promotions, initiate/create special promotions
- Test products to be displayed;
- Handle transactions (sales) and related paperwork and open, maintain, and close cash register;
- Assure that shipping/mailings/deliveries are handled properly.

Module 3--Monitor Inventory

- Take inventory, check-in merchandise against paperwork;
- Assure accurate pricing on merchandise;

- Review stock and re-stock as appropriate
- Prepare returned merchandise for resale;
- Return inventory to manufacturer/vendor;
- Initiate and/or respond to requests for merchandise transfer
- Identify damaged items and handle appropriately;
- Initiate repair order and complete special orders

Related Skills (not a complete list)

Reading for Information:

- Employees must read detailed and complicated company and/or manufacturers' policies, procedures, and information about announcements. These reading products (including materials contain words and phrases competitors' that may be specialized (jargon and products);

- Employees must interpret promotions (including jargon, technical terms and acronyms), safety instructions and emergency procedures.

Applied Mathematics

- Employees must calculate markups, discounts and taxes.;
- Employees are required to look up a formula and change units of measurement;
- Calculate shipping or other unit of fees, and conversions to other currencies or measurement (e.g., from ounces to other units (e.g.,pounds) or between systems of yards to inches),
- Calculate using mixed units (e.g., sales against goals 3.50 hours and 4 hours 30 minutes).
- Decide what information, calculations, or unit conversions are needed to find a solution. For example, employees might be required to calculate perimeters and areas of basic shapes (e.g., rectangles and circles) to calculate percent discounts or markups, or to complete a balance sheet or order form that requires several math operations (e.g., total an order, and then calculate tax and shipping costs).

Locating Information

- Employees must read straightforward order forms, line graphs, charts and tables;
- Understanding floor workplace graphics, such as basic diagrams to set up standard displays;
- Employees are required to find several pieces of tracking procedures information; and
- Summarize and/or compare special orders, information and trends in a single tracking procedure.

Consumer Service -- Cosmetology

Technical Activities / Skills Required

A SAFETY, HEALTH, AND SANITATION PROCEDURES

- Perform a wet and dry sanitizing procedures, sanitize the service area, equipment, and implements including electrical equipment, metal implements, towels, smocks, and capes;
- Handle, store and use hazardous materials with care (follow manufacturers directions regarding use of materials), and ensure working area is ventilated
- Follow procedures for protection of clients
- Follow local, state, federal regulations (MOSH, OSHA, EPD, DOT)
- Give first aid for minor cuts, chemical reactions to scalp or skin or chemical in eye

B SHAMPOO AND CONDITION HAIR AND SCALP

- Analyze client's hair and scalp, shampoo hair, apply hair conditioners
- Treat special scalp and hair conditions
- Identify and refer untreatable conditions
- Suggest/sell hair care or hair-related products

I PERFORM SALON RECEPTION FUNCTIONS

- Open salon, answer telephone, make telephone calls and greet clients
- Schedule client appointments, explain salon policies to clients
- Record client services in personal files
- Recommend professional retail products and maintain inventory of retail products
- Receive payments for services and products

Hospitality and Tourism -- Front Desk Clerk

DUTY AREA: Process Reservations

- Determine Requested Date Available--Determine if reservation is transient/group reservation, dates and availability. If available, make reservation or negotiate a rate (based on availability);
- Match Services/Accommodations To Guest Expectation--Determine guest's desired accommodations, for corporate and/or private, discuss types of accommodations, rates, dates and amenities.
- If requested, communicate local activities and benefits of hotel.
- Analyze Ability To Pay--Determine guest's desired accommodations and availability by narrowing field of options and communicate information to guest.

DUTY AREA: Register The Guest

- Block Rooms For Arriving Guest--Run a preference report at beginning of day and analyze frequencies of guest stays and/or type of guests (VIPs, frequent stayer, handicap, and other specials).
- Greet Guest--Acknowledge the guest, ask how guest can be helped (act on the guest's first response).
- Obtain And Verify Required Registration Information--Ask guest's name and verify with additional information. Verify reservation information, room type, location, rate and method of payment.

DUTY AREA: Serve As Primary Guest Liaison

- Answer phones, determine origin of call and determine nature of call.
- Respond to guest's need. If unable to respond, inform guest, then redirect call.
- Process Messages--Determine if guest being called is registered/expected. If checked in, but not available, type messages on guest message screen or leave messages on voice mail;
- Process Deliveries--Acknowledge delivery and refer delivery to security. Then determine if guest is registered/expected to property.

DUTY AREA: Perform Guest Accounting

- Maintain Bank--Obtain starting cash and verify cash balance (if discrepancy exists, notify manager).
- Secure cash drawer during operations, when closing bank on p.m. shift, complete tally sheet on bill denominations. Balance end-of-shift amount against shift closing statement (If discrepancy exists, find discrepancy and resolve).

- Drop deposit in safe, observing property security procedures and return starting cash to safe.
- Balance Daily Posting Transaction--Run preliminary report to determine how much cash was received and paid out.
- Make Cash Transactions--For traveler's checks: observe guest countersigning check; stamp the check with endorsement and with "for deposit only" if appropriate; write room number on check; ask guest what type of bills are desired; retain check for deposit in property's bank.
- Cash Checks--Ask/verify if person is a guest at the property and for room number. Determine if you have enough cash and anticipate future cash needs. If using automatic verification system: access check verification screen; enter information requested; receive verification

Hospitality and Tourism -- Hospitality Business Alliance

The Hospitality Business Alliance is an Educational Partnership of the National Restaurant Association and the American Hotel & Motel Association. The Hospitality Business Alliance Provides School-to-Career Training in Foodservice, Lodging and Travel Creating tomorrow's leaders. Across the country, high school students are preparing to be the hospitality industry's professionals of tomorrow.

For example, program are being developed and updated to prepare students for careers in the restaurant and foodservice industry. Students gain valuable restaurant and foodservice skills through their academic and workplace experiences. Students are hired for internships by qualified foodservice operations. There they receive first hand training from worksite mentors. Back in the classroom, lessons and activities come alive as your students make real world connections. Practical lively learning takes place both on the job and in the classroom. Students learn both culinary essentials and basic foodservice management skills.

Some of the management skills developed include:

- Customer Relations
- Cost Controls
- Basic Accounting Principles
- Marketing
- Purchasing and Inventory
- Communications

For more information, access the following Web Pages:

- Hospitality Business Alliance at www.h-b-a.org/
- National Restaurant Association at www.restaurant.org/
- International Food Safety Council at www.foodsafetycouncil.org/

Sample Technical Skills Standards for Health and Biosciences

- Careers in Health Care--General, Emergency Medical Tech. (EMT)
- Agricultural Biotechnology

Careers in Health Care -- General Health and Biosciences

1. Health care workers will understand the legal responsibilities, limitations, and the implications of their actions within the health care delivery setting. They will perform duties according to regulations, policies, laws, and legislated rights of clients.

2. Health Care Core--Ethics: Health care workers will understand accepted ethical practices with respect to cultural, social, and ethnic differences within the health care environment. They will perform their duties within established ethical guidelines, supporting sensitive and quality health care delivery.

3. Therapeutic Diagnostic Core: Therapeutic and diagnostic workers will understand the process for monitoring client health status. They will assess health status according to respective professional standards and report results to the treatment team.

Careers in Health Care -- Emergency Medical Technician (EMT)

Listed below are sample *duties* and *tasks* routinely performed by an EMT. This list is taken from an occupational analysis sponsored by the Vocational-Technical Consortium of States (VTECS). The *duties* and *tasks* and *performance standards* for each are contained on the VTECS software. For more information on VTECS software, contact Pat Mikos at MSDE at 410-767-0635.

A. PROVIDE FIRST RESPONSE READINESS AND CARE

- Receive emergency call for help and respond to emergency scene.
- Evaluate scene of automobile accident.
- Evaluate hazards to rescuer.
- Gain access to patient and obtain consent for treatment.
- Perform triage at accident scene.
- Set up disaster command.
- Perform primary survey on patient.
- Perform secondary survey on patient.
- Gather information from patient, relatives, and/or bystanders.
- Position the patient for basic life support.
- Soothe the fears of patient involved in accident
- Control the scene of the accident.

- Maintain patient confidentiality.
- Protect patient's privacy from onlookers.
- Determine the safety of a scene.

B. EXTRICATING AND MOVING PATIENTS
- Extricate a patient using a KED (Kendrick Extrication device).
- Extricate patient from an underwater vehicle and/or a collapsed building.
- Carry a loaded stretcher.
- Move a patient using a blanket drag, a clothes drag and a one rescuer drag.
- Move patient using pack-strap carry, a long backboard, and a scoop stretcher.
- Move patient using a stair chair.
- Move patient using a fireman's carry.
- Move patient using a direct ground lift.

C. CHECKING PATIENTS' VITAL SIGNS
- Check pulse rate, character, and rhythm.
- Check respiration rate, character, and rhythm.
- Check blood pressure.
- Check skin temperature and patient's skin color.
- Check pupil reactivity and eye tracking.

D. PROVIDING AIRWAY CARE AND PULMONARY
- Perform jaw lift airway maneuver.
- Perform chin lift airway maneuver.
- Suction mouth and pharynx.
- Administer bag-valve mast ventilation.
- Treat patient with pulmonary edema.
- Treat patient with bronchial constriction.
- Insert a crico stick (transtracheal jet insufflation).
- Perform a cricothyrotomy.
- Perform mouth-to-mouth resuscitation.
- Perform mouth-to-mask resuscitation.
- Perform mouth-to-stoma resuscitation.
- Administer oxygen to breathing patient.
- Perform intermittent positive pressure ventilation (IPPV).
- Remove foreign body obstruction from airway.
- Determine cause of respiratory distress.
- Insert an oropharyngeal airway and/or a nasopharyngeal airway.
- Intubate patient with an EOA (esophageal obturator airway).
- Intubate patient with an ET tube (endotracheal tube).
- Intubate patient with an EGTA (esophageal gastric tube airway

E. CONTROLLING EXTERNAL BLEEDING
- Elevate wound to control bleeding.
- Apply direct pressure to wound to control bleeding.
- Apply pressure dressing to control bleeding or to pressure point to control bleeding.
- Apply tourniquet to control bleeding.

Agricultural Biotechnology

Agricultural biotechnology technician is an emerging occupation -- one that is expected to have tremendous growth potential over the next decade and beyond. It is also an occupation that requires academic preparation in fields of science that are not currently included in the curricula of most secondary and technical schools in the United States. Listed below are examples of technical and academic skills needed by technicians working in labs, greenhouses, animal facilities and the field.

A. Technical Communication Skills

1. Follow protocol.
2. Keep accurate records.
3. Write technical summaries.
4. Organize and present oral summaries.
5. Locate and review reference materials.
6. Comprehend a technical vocabulary.

B. Safety Skills

1. Identify first aid supplies, personnel and emergency protection areas.
2. Keep work area free from clutter.
3. Use appropriate safety procedures and guidelines.
4. Monitor, use, store and dispose of hazardous materials properly.
5. Use protective equipment.
6. Use hoods.
7. Maintain, understand and follow Material Safety Data Sheets (MSDS).
8. Maintain safety equipment.
9. Recognize common lab hazards.
10. Recognize safety symbols/signs.

C. Basic Lab Skills

1. Practice aseptic techniques.
2. Prepare glassware.
3. Perform mathematical calculations and conversions.
4. Make stock reagents and solutions.
5. Monitor physical properties of a solution.
6. Sterilize reagents and equipment.
7. Make and dispense media.
8. Maintain reagent integrity.
9. Maintain inventory of laboratory supplies.
10. Communicate with vendors.
11. Use basic weighing and measuring techniques.
12. Use scientific method.
13. Perform basic separation techniques.
14. Package, handle, and ship biological material

D. Basic Microbiology

1. Identify and quantify microorganisms and cells.
2. Isolate, maintain, and store pure cultures.

3. Maintain and analyze fermentation materials.
4. Harvest cells.
5. Transform hosts.
6. Perform bioassays.

E. Cell Biology Techniques

1. Isolate and characterize cell lines.
2. Propagate plant and animal tissue.
3. Use cryogenic techniques.
4. Use microscopes.
5. Perform cytological tests, i.e. sectioning and staining.
6. Perform bioassays.

F. Quality Control

1. Perform validation testing.
2. Document product specifications.
3. Perform statistical and data analysis.
4. Use analytical equipment.
5. Compare results to government and/or company standards.

G. Regulatory Compliance

1. Follow regulations: U.S. FDA.
2. Follow regulations: U.S. OSHA.
3. Follow regulations: U.S. USDA.
4. Follow state and local regulations.
5. Follow industry and professional regulations.

RELATED SKILLS (samples--not a complete list)

I. Science -- Biological

- Compares living organisms by applying a classification scheme;
- Identifies components of nucleic acids;
- Identifies structure of cells and the function of their components;
- Explains the carbon, oxygen and nitrogen cycles;
- Explains the genetic basis of diversity;
- Cites and explains major cell processes such as respiration and photosynthesis;

II. Science -- Physical Science

- Describes/explains acids/bases in general, for acid Indicators, for base indicators, for ions, for neutralization/salts, pH;
- Describes/explains atoms in general; chemical equations; chemical formulas; composition, e.g. electrons, protons, neutrons; mass; number; structure; weight;
- Describes/explains chemical reactions in general, in activation energy, catalysts, concentration, endothermic, energy changes, exothermic, inhibitors, moles, reactants;

Sample Technical Skills Standards for Information Technology

- Core IT Skill Areas (Project Management; Task Management; Problem-Solving/Troubleshooting)*
- Database Development Administration
- Enterprise Systems Analysis and Integration
- Network Design and Administration
- Web Development and Administration

*The Core Skill Areas may be applied to all IT Technical Standards.
**The information presented in this section has been adapted from the publication of the NorthWest Center for Emerging Technologies entitled *Building A Foundation for Tomorrow: Skill Standards in Information Technology*. Please note that this is a small sampling of selected skill standards from the publication, to order the full document visit the NWCET website at www.nwcet.bcc.ctc.edu. A copy of the order form can also be found in Section 8 of Strand 1 and Section 9 of Strand 2 binders.

Core IT Skill Areas

A. Project Management
   A1. Define scope of project
   A2. Identify stakeholders, decision-makers and escalation procedures
   A3. Develop detailed task list (work breakdown structures)
   A4. Estimate time Requirements

B. Task Management
   B1. Define scope of work to achieve individual and group goals
   B2. Develop time and activity plan to achieve objectives
   B3. Design and develop work processes and procedures
   B4. Identify and obtain tools and resources to do the job

C. Problem-Solving/Troubleshooting
   C1. Define the problem
   C2. Perform appropriate analysis to identify problem cause
   C3. Identify/test possible solutions
   C4. Develop resolution plan

Database Development and Administration

Sample job titles: Data Administrator, Data Analyst, Database Developer, Systems Administrator

A. Analyze and Design Database
   A1. Perform research and analyze requirements
   A2. Create and refine conceptual
   A3. Identify high-level business rules for data model
   A4. Adapt conceptual and logical data models to enterprise model

B. Develop and Implement Database
   B1. Develop physical database characteristics and user interface
   B2. Create database objects
   B3. Select unique identifiers and normalize the data model
   B4. Support population of database

C. Perform Administration and Maintenance
   C1. Develop and implement monitoring plan
   C2. Analyze monitoring data
   C3. Manage back-up and recovery both on-site and off-site
   C4. Create and implement maintenance plan for regular integrity checks

D. Perform Security Administration
   D1. Gather and document security requirements
   D2. Design and document security plan
   D3. Implement and enforce security requirements
   D4. Maintain and improve security in response to industry developments and user experience

E. Provide Client Services
   E1. Provide and support development environments
   E2. Plan user training
   E3. Deliver user training
   E4. Identify additional requirements.

Enterprise Systems Analysis and Integration

Sample job titles: Applications Integrator, E-Business Specialist, Information Systems Architect, Systems Analyst

A. Define Customer Requirements
   A1. Identify and document customer requirements
   A2. Define security requirements
   A3. Assess and document current systems capabilities and user trends
   A4. Develop and document business process model

B. Determine Systems Solutions
   B1. Evaluate current and emerging tools and technologies
   B2. Perform opportunity analysis
   B3. Make fiscal recommendations regarding technology
   B4. Define system security specifications

C. Provide Strategic Direction for Systems Configuration and Inter-operability
   C1. Evaluate company's technology strategies
   C2. Make recommendations regarding company's investment in technology
   C3. Define data warehousing requirements
   C4. Provide uniform integration for legacy systems

D. Provide High-Level technology Management
   D1. Define performance metrics
   D2. Audit systems performance
   D3. Provide capacity planning
   D4. Provide long-tern strategic consulting

E. Implement Systems
   E1. Manage systems implementation projects
   E2. Coordinate system testing
   E3. Perform implementation readiness review
   E4. Coordinate system user training

Network Design and Administration

Sample job titles: Communications Analyst, Information Systems Operator, Network Manager, PC Support Specialist

A. Perform Analysis/Design
   A1. Gather data to identify customer requirements
   A2. Identify, interpret, and evaluate system and network requirements
   A3. Define scope of work.
   A4. Review network architecture, topology, interdependencies and constraints

B. Perform Configuration/Implementation
   B1. Plan and document system configuration
   B2. Implement new system configuration
   B3. Perform workstation configuration and software loading
   B4. Support, track and document change implementation

C. Perform Testing
   C1. Define and document test specifications
   C2. Develop test plan and procedures
   C3. Schedule and perform testing
   C4. Document, interpret and report test results

D. Perform Monitoring and Management
   D1. Analyze system performance to baseline
   D2. Monitor and report component, security and connectivity problems
   D3. Perform functional verifications and system audits
   D4. Make recommendations for system optimization/improvement

E. Perform Administration and Maintenance
   E1. Set up and maintain user accounts
   E2. Develop maintenance and upgrade plans
   E3. Schedule and coordinate network maintenance
   E4. Apply maintenance, upgrades and process changes

Web Development and Administration

Sample job titles: Web Administrator, Web Designer, Webmaster, Web Page Developer

A. Perform Content and Technical Analysis
   - A1. Gather data to identify customer requirements
   - A2. Research content
   - A3. Define scope of work
   - A4. Prepare and present functional and technical specifications

B. Develop Web Applications/Sites
   - B1. Develop site map and application models
   - B2. Select design tolls and programming language
   - B3. Produce graphics and layout elements
   - B4. Create or adapt content

C. Implement Application/Site Design
   - C1. Develop and implement usability testing
   - C2. Plan and coordinate customer acceptance testing
   - C3. Plan roll-out
   - C4. Facilitate move to production system

D. Maintain Applications
   - D1. Update content
   - D2. Integrate customer feedback
   - D3. Perform application maintenance
   - D4. Recommend application/site improvements

E. Manage Web Environment
   - E1. Evaluate and recommend web hardware, software, and third-party solutions
   - E2. Set up server software and hardware
   - E3. Manage server
   - E4. Support disaster recovery

F. Manage Enterprise-wide Web Activities
   - F1. Define and manage development standards
   - F2. Train designers and developers
   - F3. Evaluate web technologies and standards
   - F4. Provide quality customer service

1 What Is "Dimensions of Learning"?

Dimensions of Learning is an instructional framework based on the best of what researchers and theorists know about learning. Its premise is that five types of thinking, what we call the five dimensions of learning, are essential to successful learning. The Dimensions of Learning framework will help you plan instruction that takes into account all five of these critical aspects of learning. It is particularly suited for planning units of instruction lasting one week, two weeks, or even longer. Now let's take a look at the five dimensions of learning.

Dimension 1: Positive Attitudes and Perceptions About Learning

Attitudes and perceptions affect students' ability to learn. For example, if students view the classroom as an unsafe and disorderly place, they will likely learn little there. Similarly, if students have negative attitudes about classroom tasks, they will probably put little effort into those tasks. A key element of effective instruction, then, is establishing positive attitudes and perceptions about learning.

Dimension 2: Thinking Involved in Acquiring and Integrating Knowledge

Helping students acquire and integrate new knowledge is another important aspect of learning. When content is new, students must be guided in relating the new knowledge to what they already know, organizing or shaping the information, and then making it part of their long-term memory—internalizing it.

Dimension 3: Thinking Involved in Extending and Refining Knowledge

Learning does not stop with acquiring and integrating knowledge. Learners extend and refine their knowledge by making new distinctions and reaching conclusions. They analyze what they have learned in more depth and with more rigor. While extending and refining their knowledge, learners commonly engage in the following activities:

- Comparing
- Classifying
- Making inductions
- Making deductions
- Analyzing errors
- Creating and analyzing support
- Analyzing perspectives
- Creating and applying abstractions

BEST COPY AVAILABLE

Dimension 4: Thinking Involved in Using Knowledge Meaningfully

The most effective learning happens when we use knowledge to perform meaningful tasks. For example, you might initially learn about stereos by talking to a friend or reading a magazine article about them. You really learn about them, though, when you're trying to decide what kind of stereo to buy. **Making sure that students have the opportunity to use knowledge meaningfully is one of the most important parts of planning a unit of instruction.** In the Dimensions of Learning model, there are five types of tasks that encourage the meaningful use of knowledge:

- Decision Making
- Investigation
- Experimental Inquiry
- Problem Solving
- Invention

Dimension 5: Productive Habits of Mind

The most effective learners have developed powerful habits of mind that enable them to regulate their behavior, think critically, and think creatively. Some of these mental habits are listed below:

- Being sensitive to feedback
- Being accurate and seeking accuracy
- Working at the edge rather than the center of your competence

Observing for Dimensions of Learning

I. DIMENSION 1: Helping Students Develop Positive Attitudes and Perceptions About Learning

___ A. The instructor helps all students feel accepted.
___ B. The instructor helps all students develop a sense of comfort in the classroom.
___ C. The instructor has designed instruction so that it reinforces students' sense of order in the classroom.
___ D. The instructor helps students clearly understand assigned tasks.
___ E. The instructor helps students believe that they have the ability and resources to successfully complete assigned tasks.

II. DIMENSION 2: Helping Students Acquire and Integrate Knowledge

___ A. The instructor has designed instruction to help students construct meaning for declarative knowledge (i.e., facts, concepts, generalizations, and principles) through the use of a variety of interactive strategies.
___ B. Students receive support to organize and store declarative knowledge effectively.
___ C. The instructor introduces and reinforces essential procedural knowledge (i.e., skills, processes, procedures) through ongoing modeling, shaping, and internalizing that includes providing extensive practice opportunities.

III. DIMENSION 3: Helping Students Extend and Refine Knowledge

___ A. Wherever appropriate, students receive instructional support to "own" essential knowledge through activities requiring thoughtful application.
___ B. The instructors' questions focus on higher level thinking skills and processes, rather than exclusive emphasis on knowledge/recall.
___ C. Students receive support to understand and apply important thinking processes such as the following:

___ Comparison	___ Analyzing errors
___ Classification	___ Constructing support
___ Induction	___ Abstracting/pattern recognition
___ Deduction	___ Analysis of perspectives

IV. DIMENSION 4: Meaningful Use of Knowledge

___ A. Where appropriate, the instructor involves students in long term, self directed, experience- based learning activities that reflect real world roles and situations.

___ B. Where appropriate, the instructor engages students in meaningful-use tasks designed to reinforce their ability to use the following thinking operations:

___ Decision making

___ Problem solving

___ Investigation

___ Experimental inquiry

___ Invention

V. DIMENSION 5: Developing and Using Productive Habits of Mind

___ A. The instructor models effective thinking skills and behaviors.

___ B. The instructor encourages students to reflect on their own thinking and monitor their own comprehension.

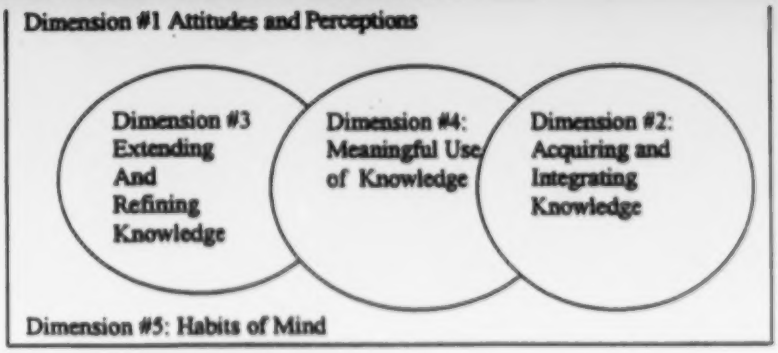
___ C. The instructor designs classroom activities to reinforce students' ability to be self-regulated in their thinking, including planning, use of resources, sensitivity to feedback, and evaluating the effectiveness of their own actions.

___ D. The instructor encourages students to be effective critical thinkers, including seeking accuracy and clarity, being open-minded, and restraining impulsivity.

___ E. The instructor encourages students to be creative, to express their own opinions, to push the limits of their knowledge, and to generate new ways of viewing a situation.

Dimensions of Learning:

A Planning Framework that provides a common language for performance-based instruction


Dimension #1 Attitudes and Perceptions
Dimension #3 Extending And Refining Knowledge
Dimension #4: Meaningful Use of Knowledge
Dimension #2: Acquiring and Integrating Knowledge
Dimension #5: Habits of Mind

Blended Instruction
Dimension #1: Attitudes and Perceptions

CLIMATE
Establish an environment where students are comfortable exchanging views related to the real-life application of what they are learning.

TASK
Plan a sequence of experiences that enable the learner to see connections among subject/content areas. This learning experience is presented in manageable "pieces."
Provide scoring tools/rubrics so students know their "target."

Dimension #2: Acquiring and Integrating Knowledge

DECLARATIVE
Construct Meaning
Organize
Store

PROCEDURAL
Construct Models
Shape
Internalize

Within any lesson or unit, teachers know the essential elements--the discrete ideas associated with the major concepts (declarative) and/or the major processes (procedural) required to understand and apply the specific content knowledge. When planning blended instruction, teachers share these "basics" with each other so that they are able to interrelate their content areas.

Use tools like cognitive maps, webs, symbols to help students construct, organize, and store knowledge.

Provide opportunities for students to practice so that they internalize the processes they will be mastering.

Dimension #3: Extending and Refining Knowledge

Teachers focus on aspects of extending and refining students' knowledge: classifying, comparing, inducing, deducing, analyzing errors, constructing support, and changing perspectives. Teams of teachers select indicators from Skills for Success for their unit planning.

Dimension #4: Using Knowledge Meaningfully

Projects are designed that apply students' understanding across content areas. These projects may involve decision making, problem solving, investigating, inventing, and/or creating ways for students to demonstrate that they have integrated the concepts presented.

Dimension #5: Habits of Mind

Teachers provide opportunities for students to create their own scoring tools, practice evaluating their own products and processes, and share their understandings of the real-life applications, so that they are able to build creative, critical, and self-regulatory behaviors.

4/98 MSDE

BEST COPY AVAILABLE

Glossary of Assessment Terms, Methods and Concepts

Alternative Assessment

Alternative assessments differ from conventional assessment procedures in the following ways: 1) tapping into higher level thinking and problem-solving skills by asking students to perform, create, produce, or do something; 2) the use of authentic, complex, meaningful tasks; 3) divergence from the "one right answer" mode common in conventional selected response tests; 4) scoring by raters applying scoring rubrics rather than machines applying answer keys; and 5) more emphasis on examining the process of learning. It is important to note that many of these assessment methods (e.g., portfolio, scenario) are not new; these methods have been traditionally used in a variety of fields. It is their current application that is new, i.e., using portfolios in academic subject areas.

Assessment

The realm of assessment encompasses those processes whereby we collect information about student progress towards educational or employment goals. The particular form of the assessment depends on the domain being assessed (e.g., subject matter expertise), and also on the uses to which the results of the assessment will be applied (e.g., end-of-course exam). Assessments can range in scale from low-stakes, small-scale assessments used in the classroom by instructors to obtain day-to-day information about student progress, through medium-scale assessments used by school districts to evaluate the effectiveness of schools or educational programs, all the way to large-scale, high stakes assessments used by state or national bodies to assess the degree to which large educational goals have been met or to make decisions regarding credentialing.

Authentic Assessment

Authentic assessment both mirrors and measures students' performance in "real-life" tasks and situations. For example, if we want teachers to manage classrooms effectively, the authentic way to assess them is to observe the teacher managing a classroom full of students.

Checklist

A checklist is a form used to keep track of a student's work or progress; often used during an observation and occasionally used during a portfolio review. A checklist operates with a dichotomous structure, i.e., it answers a yes/no question, and therefore does not imply a level of quality only completion.

Competency Test

Competency tests are designed to measure whether or not students have met minimal content and skill standards. Generally, students are required to pass such tests as a condition of promotion or graduation. Competency tests are also called basic skills tests.

Criteria

Criteria communicate goals and standards by explicitly stating those features that characterize levels of performance, ranging from unacceptable to excellent. They are important before the assessment is administered because they tell students and teachers what is expected. Criteria are important during the assessment process as they help to ensure equitable scoring of the student responses. Criteria are valuable after the assessment for their role in informing students, teachers, and other constituents of the results of the assessment, and of the procedures and methods used for deriving those results.

Criterion-referenced Test

An assessment that is designed to reveal what a student knows, understands, or can do in relation to specific objectives. Criterion-referenced tests are intended to identify strengths and weaknesses in individual students in terms of knowledge or skills.

Developmental Checklist

A listing of the traits or behaviors a teacher should be watching while observing students.

Demonstration

This is an assessment method that requires a student to perform a skill by doing, creating, or conducting a task. Demonstrations may occur in "authentic" settings or in classroom simulations. For example, a student teacher might plan and conduct a lesson for his or her peers to demonstrate lesson planning skills.

Enhanced Multiple-choice Questions

Test writers can enhance, or improve, multiple-choice questions by making them more than passive-recall test questions. Such questions may ask students to interpret a case study, classify types of behavior, draw inferences from a simulation, or to justify their choice in a short written response.

Equity

Literally, this means freedom from bias or favoritism. Key features of alternative assessments that may support this objective are the provision of multiple options and student choices, with respect to the formats of both task and response.

Evaluation

The process of interpreting or making judgments about assessment data to determine the extent to which students are achieving instructional objectives and meeting standards.

- Formative evaluation: an evaluator judges the performance in order to determine the level of knowledge, skills, and ability and gives the student feedback in order to improve his or her performance. For example, observations often include a pre- and post-conference so that the student understands both the strengths and weaknesses in his or her performance.

- Summative evaluation: an evaluator judges the performance in order to determine the level of knowledge, skills, and ability. For example, multiple choice achievement tests are often used as exit exams, a type of summative evaluation.

Exhibition

The production of discourse, things, or performances for a public audience. Generally, exhibitions require the integration of a broad range of competencies and considerable student initiative and responsibility in carrying them out.

High-stakes Assessment

Testing that has strong consequences for the participants is referred to as high stakes. For teachers such consequences might include hiring or promotion decisions. For students, performance in a high-stakes assesssment might affect entry into a special class, college admission, or the awarding of a diploma. The bar examination is an example of a high-stakes test.

Interview Sheet

This is a form that is used to guide interviews and conferences. Generally the interview sheet consists of a list of questions to be asked by the teacher with space for recording responses.

Journal

Journals are ongoing, written records of thoughts on topics of personal interest. A *dialogue* journal is an extended written interchange between a teacher and a student on a topic of mutual interest. Journal writing gives students practice in reflective thinking.

Learning Log

Logs are ongoing records of students' accomplishments and future goals. Like journals, learning logs can be used to encourage self-assessment and metacognition.

Low-stakes Assessment

Testing that has few direct consequences for the participants is considered to be low stakes. Such testing is generally used for diagnosis of individual students or to provide information for such purposes as formative evaluation (e.g., feedback) or curriculum design.

Multiple Choice

A response format in which students select from two or more predetermined choices. The multiple choice format is often considered to be synonymous with standard assessments, although variants on this format may move towards the alternative end of the assessment spectrum. Enhanced multiple choice formats may involve questions that are linked and sequenced in a manner that provides more insight into features such as the student's prior knowledge or the particulars of the solution process employed by the student.

Norm-referenced Test

Norm-referenced tests are standardized assessments designed to place a student or group of students in rank order compared to other test takers of similar characteristics, such as age, grade, or occupation.

Observation

Observations involve direct viewing of student behavior in the classroom context. Evaluators often conduct pre- and post-observation conferences to give the student feedback (i.e., formative evaluation).

On-demand Assessment

Testing at a predetermined time and place with little or no teacher or student discretion.

Open-ended Response

A response format that requires students to generate a response are called open-ended. This description is usually applied to prompts to which there is no single right answer, as opposed to a simple "fill in the blank" format. For example, "What is the area of a rectangle of length 4 and width 6?" requires a generated response, but there is only one appropriate response and so would not qualify as open-ended. Contrast this with "What could be the dimensions of a rectangle with an area of 24," a question for which numerous correct responses exist.

Opportunity to Learn

The phrase, "opportunity to learn," means that educators must give students (or employees) equitable and adequate learning resources to acquire high-level knowledge and skills. For example, if a school district decides to change the standards by which teachers are to be evaluated, the district must provide adequate professional development, supporting teachers in their efforts to meet the new standards.

Peer Evaluation

Peer evaluation and peer coaching are examples of formative evaluation. The evaluations can be formal (i.e., using an observation form with criteria) or informal (e.g., a focused conversation).

Perform

To perform means to carry out or bring to completion. In the assessment context, performing should involve displaying one's knowledge in use.

Performance Assessment

Direct, systematic observation and assessment based on student performances or performance samples and established performance criteria. For example, a student's portfolio should contain samples of his or her work in the classroom.

Portfolio

A portfolio is a purposeful collection of work that "tells the story" of a student's efforts, progress, or achievement in a given area(s). Portfolio assessment involves three key features: 1) a clearly defined assessment purpose; 2) criteria and methods for deciding what samples are collected, and when; and 3) criteria for assessing individual samples of student work and/or the portfolio as a whole. This collection should also include student participation in selection of portfolio content and evidence of self-reflection.

- Structured portfolios: specific performance tasks are required, demonstrating particular knowledge and/or skills; students may be allowed to select some of the entries.

- Process portfolios: no specific performance tasks are required; the student is allowed to select all entries.

Project

A project is an extended assessment task, usually requiring at least several days to complete. Students may work individually or in groups, and considerable student-directed activity may be involved. Products resulting from projects may take various forms, among them written reports, oral presentations, or multimedia displays. Projects offer opportunities to assess aspects of student performance other than just the product. For example, a group project provides opportunities to assess individual students with respect to their group interaction skills.

Prompt

A prompt is a description of a topic, situation, or scenario to which students are expected to respond in some way. Prompts may also refer to a question used on a test.

Reliability

An assessment is reliable to the extent that scores given to students accurately reflect the students' true abilities. Even on standardized tests with multiple choice responses and answer keys, scores for an individual student may differ from day to day. This problem is compounded with alternative assessments as the same sample of student work may receive different scores from different raters, or even from the same rater at different times. Clear, exhaustive, and consistent scoring rubrics, thorough training of raters, and the use of training and anchor papers are all factors that can work to increase reliability. Although reliability is always an important concern, its importance increases as the stakes involved in the assessment increase. In a classroom situation, where there are repeated opportunities for evaluation and multiple sources of input for decisions about students, reliability concerns are minimal, whereas in one-shot, large-scale testing for the purposes of credentialing or determining minimum competencies, reliability concerns are paramount.

Rubric

Rubrics, or scoring guides, are used for scoring an open-ended assessment. A typical rubric contains a scoring scale; it states the major traits to be examined; and it describes the key traits of performance for deciding what score to assign to different dimensions of student product or performance. Scales may be quantitative (e.g., a score from 0 to 6), or qualitative (e.g., "adequate performance" or "proficient"), or a combination of the two.

Scenario

Administered orally or in writing, scenario assessments present a realistic situation with an embedded problem. The student listens (or reads) the scenario and solves the problem. Scenarios are often taken from real job-like experiences.

Secure

Standardized assessments, especially for high-stakes purposes, are often held secure. This means that the test questions are secret and are unavailable for previewing. With authentic assessment, students and teachers often know in advance what they will be asked to do and are encouraged to prepare accordingly.

Simulation

Students demonstrate knowledge, skills and ability during a role play or simulated situation. Simulations are often used when it would be dangerous or controversial to assess these skills directly in context.

Standard

In assessment, a standard is a statement of what a student should know and be able to do in a given subject area, or domain. *Context* standards describe in broad terms the concepts and knowledge a student should strive to master. *Performance* standards describe a level of achievement, giving meaning to scores by identifying the level at which students pass, fail, or excel.

Standardized Tests

These assessments are administered and scored in exactly the same way for all students. Traditional standardized tests are typically mass-produced and machine-scored and are designed to measure skills and knowledge that are thought to be taught to all students in a standardized way. Standardization is an important consideration if comparisons are to be made among scores.

Task

Tasks are complex, goal-directed assessment activities. An authentic assessment task demands that students bring a broad range of knowledge and skills to bear on a complex problem.

Test

Tests are measuring instruments for assessing and documenting student learning. The traditional test is a single-occasion, one-dimensional, timed exercise (e.g., SAT).

Validity

An assessment is valid to the extend that the traits, characteristics, or abilities that are measured by the assessment agree with the purposes for which the assessment is to be used. Validity, then is not an inherent characteristic of an assessment, but is linked instead to the decision context in which the assessment is placed.

Sources for this Glossary

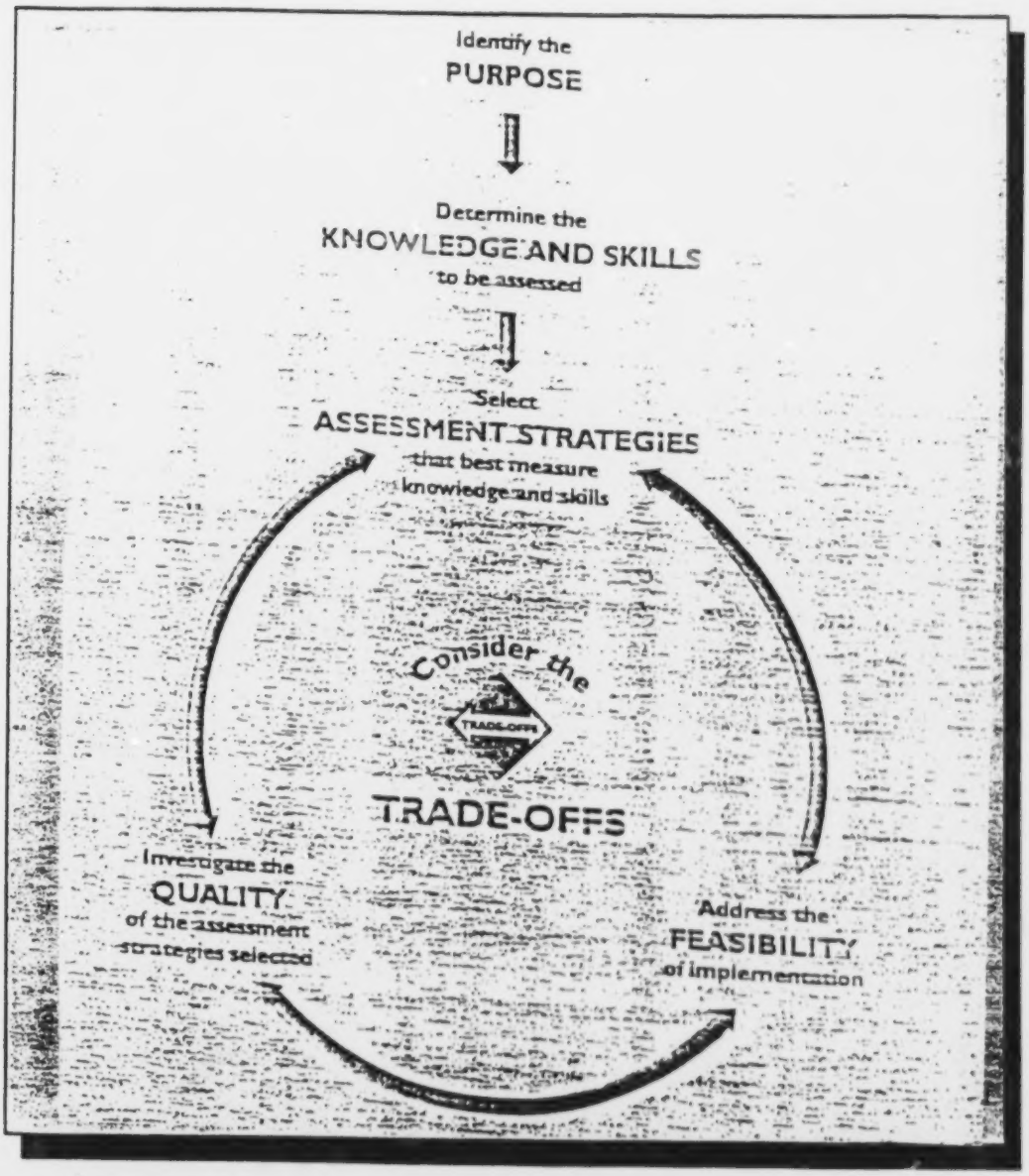
Koelsch, N., Trumbull, E., Farr, B. (1995) Guide to Developing Equitable Performance Assessments. (Contract No. RP91002066). San Francisco, CA: WestEd.

Hart, D. (Ed.). (1993). Authentic Assessment: A Handbook for Educators. Reading, MA: Addison-Wesley.

National Center for Fair and Open Testing (1995). Principles and Indicators for Student Assessment, (a report from the National Forum on Assessment Systems). Cambridge, MA: Author.

Regional Educational Laboratory Network Program on Science and Mathematics Alternative Assessment (1994). A Toolkit for Professional Developers; Alternative Assessment. Portland, OR: Author.

Stansbury, K., Long, C. (1992) Assessment Component of the California New Teacher Project: Summary Evaluations of Innovative Assessment Methods. San Francisco, CA: Far West Laboratory for Educational Research and Development.



One form of assessment is not necessarily better than another in every case. The choice depends on the purpose, the knowledge and skills that you want to assess, and quality and feasibility considerations.

BEST COPY AVAILABLE

Nevertheless, it may make more sense to measure certain skills with one type of assessment than another because one type may reflect the skills more efficiently, may represent a particular situation more accurately, or may more realistically demonstrate performance than another. The following chart captures the main advantages of each type of assessment:

CHART 1

STRATEGY	STRENGTH
Written assessment • Multiple choice and short answer	Measuring factual knowledge and algorhythmic skills
• Essay, problem-based, and scenario questions	Measuring knowledge in context and obtaining more complete analyses of situations
Performance tasks	Judging actual employment-related performace rather than underlying knowlege or basic workplace skills
Portfolios	Painting a cumulative picture of accomplishments over time, and growth in sophistication and skills in a variety of situations
Senior projects	Showing a cumulative picture of complex, integrated activities, including their planning and implementation

Subsequent sections of this practitioner's guide will examine additional considerations that will affect the type of assessment you choose, including quality, feasibility, and other practical constraints.

The types of assessments presented here are drawn from Module 4: "Student Assessment," from *Getting to Work*. For more information on the advantages and disadvantages of various types of assessment, see Module 4's Introduction, "Pros and Cons of Different Kinds of Assessment," pp. M4–8 to M4–9.

BEST COPY AVAILABLE

Work Session on Blended Instruction
Integrated Project Activity Assessment Example

Please note: the following is an example of an assessment for one activity that is incorporated in the Integrated Project Report sample, "Health of a Nation," included in the participant folders. The full project includes several activities (this is activity D). Ideally, multiple methods of assessment should be integrated throughout a Blended Instruction project or curriculum alignment plan.

Project Title: **The Health of a Nation -- Controlling a Virus**

Technical Skills Standard: Health/Bioscience Standard:
Health care workers will understand the legal responsibilities, limitations, and the implications of their actions within the health care delivery setting. They will perform duties according to regulations, policies, laws and legislated rights of clients.

CLG, SFS:
English 2.3.3 The student will use a systematic process for recording, documenting, and organizing information.
SFS 3.2.1 The student will gather information from a variety of sources, using appropriate skills, strategies, resources, and technologies.

Project Activity: D. Interview public health officials and health care providers about the virus under study (a team of students is assigned to study one virus, e.g., Ebola, HIV, chicken pox, malaria).

When: Week four of the 10-week project

Where: English class

Purpose:
1. To assess students' abilities to conduct research, synthesize the results, and convey information.
2. To assess students' understanding of the legal and ethical responsibilities of health care workers communicating health care concerns.

Method: Performance Task -- Teachers develop criteria for interview questions that students will ask of a panel of public health officials and health care workers on the legal and ethical responsibilities of health care workers treating patients with the virus under study. The criteria are incorporated into a rubric. The rubric is used by the teachers, panel and students to assess student achievement.

Description of Assessment:

1. Teachers develop and share the rubric for interview questions with students prior to the students conducting research.
2. Each team of five students conducts research on the legal and ethical issues health care workers face when providing services to and communicating with patients who have the team's assigned virus.
3. Each student focuses on one aspect of the virus. The results of the student's research serves as the basis for formulating appropriate interview questions for the panel of public health officials and health care workers.
4. Each student submits in writing ten questions developed on the basis of his or her research.
5. Teachers evaluate the questions against the established criteria in the rubric prior to the interview. The Allied Health teacher assesses each student's knowledge of the pertinent scientific, legal and ethical content. The English teacher assesses the student's abilities to develop effective questions and convey information in written form.
6. Each student team is limited to asking a total of 10 questions. The team reviews all of the questions developed by its members and selects which questions to ask the panel based upon the criteria in the rubric.
7. Student teams interview the panel; the panel assesses their performance using the rubric.

This is an example of a formative assessment.

Blended Instruction Assessment Worksheet

Instructions: The purpose of this worksheet is to help you analyze how best to assess your students' mastery of the Core Learning Goals, including Skills for Success, and industry skills standards within Blended Instruction activities. A menu of options is included on page two, but feel free write in the method you think best suited to the purpose of the assessment and the skills and knowledge being measured.

Project Title	Project Activity	CLG, SFS, Technical Skills Standards (e.g., SFS 3.2)	When will this occur? (1st week, 4th week, end, etc.)	Where will this occur? (e.g., lab, English class)	Purpose of the assessment	Method(s)of assessment (see menu below)	Description of Assessment

BEST COPY AVAILABLE

Menu of Assessment Methods

- ❒ Performance Tasks
- ❒ Demonstration
- ❒ Exhibit
- ❒ Oral presentation
- ❒ Portfolio
- ❒ Simulation
- ❒ Journal
- ❒ Learning log
- ❒ Open-ended questions
- ❒ Scenario
- ❒ Written Assessment
  --multiple choice, short answer, essay
- ❒ Observation
- ❒ Pre/post test

**Note: It is important to strive for a balance of methods and to always use multiple methods. A single assessment will never provide sufficient information on a student's knowledge and skills.*

Other factors to consider:

- ❑ Who will score the assessment? Will they need training?
- ❑ How will benchmarks be set?
- ❑ Should you collect samples to show what high quality work looks like?
- ❑ Will the assessment be scored by more than one teacher?
- ❑ Will you need a rubric or will a simple checklist suffice?
- ❑ Have you left enough time for students to complete the assessment?
- ❑ Will the method provide you with enough evidence of a student's skills and knowledge that you can accurately and fairly score the work?
- ❑ Do you have sufficient resources for all students?
- ❑ Have you planned to use multiple assessments throughout the project?

Northwest Regional Educational Laboratory suggests four keys to sound assessment design:

- ❑ Arise from clear and appropriate student learning targets.
- ❑ Serve a focused and defined purpose.
- ❑ Rely on a method that is well matched to target learning goals.
- ❑ Eliminate possible sources of bias and distortion.

(Check their web site for information about their *Toolkit 98*.)

1 **Career Connections Work Session on Blended Instruction**
Strand One – Designing Integrated Projects

School-Based Team Planning Session

3:00 – 4:00 p.m.

The following indicates where each school-based team will meet to develop plans to implement blended instruction. **If you are a Strand One participant, but are not a member of a school-based team, please select a school team within your region to meet with during this session.**

Local School System	School	Room	Facilitators
Allegany County	Allegany College of Maryland	**Room 302**	Teri Hollander
Anne Arundel County	Center of Applied Technology South Glen Burnie High School North County High School Northeast High School	**Room 303**	Diana Bailey Tom Clowes Joyce Coleman
Baltimore City	Edmondson-Westside High School Forest Park High School Southern High School Western High School	**Room 302**	Pat Mikos
Baltimore City	Metropolitan Transition Center New Foundations	**Room 305**	Jeff Lucas Doris Sharkey
Baltimore County	Good Shepherd Center RICA/Catonsville Education Center	**Room 305**	
Baltimore County	Florence Bertell Academy of Baltimore Lansdowne High School Randallstown High School St. Elizabeth School	**Deck C**	Lynne Gilli Lisa Cook
Charles County	Lackey High School	**Room 307**	Sarah Martin
Dorchester County	Chesapeake Youth Academy	**Room 307**	Sarah Martin
Frederick County	Urbana High School	**Room 307**	Sarah Martin
Howard County	Atholton High School	**Room 307**	Sarah Martin
Prince George's County	DuVall High School Forestville High School Friendly High School High Point High School Largo High School Northwestern High School Oxen Hill Staff Development Center Parksdale High School Potomac High School	**Room A 300**	Nina Roa Pam Sikowitz Nancy Davis
Queen Anne's County	Kent Island High School	**Room A 300**	Nina Roa
St. Mary's County	Leonardtowne High School	**Room A 300**	Nina Roa

Getting To Work

Blended Instruction Facilitator Information

Getting To Work: A Guide for Better Schools -- Module Two: Integrated Curriculum Unit One: Integrated Projects; Unit Two: Curriculum Alignment; and Unit Three: Industry-Based Education

This guide is designed to take participants through the integrated and curriculum alignment processes project (i.e., blended instruction) that they will experience at the Work Session on Blended Instruction. It provides information for Maryland teams to take these processes back and use them at their schools following the Blended Instruction Work Session. Following is a brief description of the main units of Getting To Work:

Unit One: Integrated Projects

One or more teachers use academic standards, industry skill standards, and work-readiness standards to design projects that help students apply academic concepts in a real-world setting.

This unit includes an overview on various types of standards as well as examples of them. This overview explains why standards are used to design integrated projects and provides an explanation of the different types of standards that exist (program, content and performance). This section also provides guidelines on some "criteria" for user's to consider when selecting a set of standards on their own, as well as providing examples of combined standards that work well together. These examples of sets of standards for designing integrated projects include 1) a national academic standard; 2) an industry skill standard; and a 3) work readiness standard from SCANS (the Secretary's Commission on Achieving Necessary Skills). These sets might be standards around which users of this unit would like to design their integrated projects, or, they might substitute similar standards from the state or district. This unit also provides the user with sample work sheets and next step suggestions.

Unit Two: Curriculum Alignment

Two or more teachers change the timing of the units they teach so that units with natural connections are taught at the same time throughout the school year. Then, teachers find points in the newly arranged curriculum that lends itself to integrated projects. The projects and the alignment reinforce and further unite common themes and concepts across the aligned curriculum.

This unit includes a series of steps to follow when aligning curriculum. It provides the user with examples of what aligned curriculum looks like, as well as an activity that takes the user through the steps of designing aligned curriculum. This unit also provides the user with information on how to design an integrated project from aligned curriculum. Unit Two highlights some case studies of quality aligned curriculum, including an example from Easton High School in Easton, MD.

Unit Three: Industry-Based Education

A broadly defined industry is the unifying theme of a student's academic and technical program of study throughout high school. Academic and vocational teachers work together, with the same students, to bring the world of work into the curriculum, exposing students to a range of postsecondary opportunities.

This unit discusses the benefits of an industry-based high school curriculum. It provides examples of frameworks, for example, Maryland's Career Clusters and Oregon's Career Majors that can be used to organize curriculum. It also gives the user an overview of what a thematic program of study should look like, as well as worksheets to help users develop their plans.

INTEGRATION ACTION PLAN

For School-based Teams

Directions: What are three specific goals and related steps that your school can accomplish during the next six months to promote integrated projects and/or curriculum alignment at your site? Describe how your goals will be achieved on the three action plans (one for each goal) that follow

GOAL #1:			
What are the next steps your team will take?	**When?**	**Who is responsible?**	**What resources will you need?**

INTEGRATION ACTION PLAN

For School-based Teams

GOAL #2:			
What are the next steps your team will take?	**When?**	**Who is responsible?**	**What resources will you need?**

INTEGRATION ACTION PLAN

For School-based Teams

GOAL #3:			
What are the next steps your team will take?	**When?**	**Who is responsible?**	**What resources will you need?**

Career Connections Work Session on Blended Instruction
Strand One - Designing Integrated Projects
February 10, 2000

1

PARTICIPANT EVALUATION

Rating Scale
Unsatisfactory (1) .....Excellent (5)

9:00 A.M. - 3:00 P.M. BREAKOUT ROOM NAME OR #: _____

Please rate your satisfaction with the following:

Overall Content of the Workshop	1	2	3	4	5
Overview of Career Connections/ Introduction to Blended Instruction (Overhead Presentation)	1	2	3	4	5
Workshop Activities					
Integrated Project Planning	1	2	3	4	5
Assessment in Blended Instruction	1	2	3	4	5
Sharing of Projects	1	2	3	4	5
School-Based Team Planning	1	2	3	4	5
Breakout Room Facilitators					
Facilitation of Integrated Project Planning	1	2	3	4	5
Facilitation of Assessment in Blended Inst.	1	2	3	4	5
Facilitation of School-Based Team Planning	1	2	3	4	5
Breakout Room Resource Person(s)					
Facilitation of Sharing/Feedback Session	1	2	3	4	5
Materials	1	2	3	4	5

Comments:

What did you like about this workshop?

How could we improve this workshop?

What kind of follow-up activities or materials would be useful to you?

Easton High School
Mecklenburg Avenue • Easton • MD • 21601

Timothy Thurber, Principal • (410)822-4180 • Fax (410) 819-5814

1999-2000 Blended Instruction Project

"The Salad Bowl"

School Team Leader: Mrs. Beth Majchrzak - Agriculture Instructor
E-Mail address mmajchrzak@tcps.k12.md.us
School Team Members - Mrs. Linda Brown-Culinary Arts Instructor
Mr. John Melton-AP Biology Instructor

Project or Curriculum Alignment Plan Description

Activities: As a part of this project students will:

* Design and build a hydroponics production system
* Research plant needs
* Grow vegetables and herbs in the system
* Record and monitor nutrient use, plant growth and production
* Collect and analyze data using modern technology
* Conduct original research studying the effects of various factors as water, light, and nutrient use
* Keep records of cost and perform cost analysis
* Harvest and utilize produce and herbs
* Maintain system by raising seed or cuttings for new plants
* Research and perfect recipes using fresh vegetables and herbs
* Prepare and sample foods and evaluate use of products
* Preserve excess harvest utilizing dehydration and pressure canning methods
* Market dried herbs with tested recipes to generate funds to make the project self supporting
* Discuss related career paths in biology, English, math, agriculture, food science, and food service

Grade Level: 10-12

Role of Participating Teachers (by discipline):

Agriculture: As Science, Ag Business, and Horticulture classes; management of hydroponic system

Chef/Nutrition: Food Science and Chef Cook classes; nutrition, food preparation, dehydration, processing, presentation, marketing

English: English classes; written and verbal communication

Math: Math and computer graphing skills

Biology: A.P. Biology classes; H_2O quality, research and plant development, environmental issues

Academic Disciplines of High School Core Learning Goals to be Integrated:
The student will.....

ENGLISH:

GOAL 1: ...demonstrate the ability to respond to a text by employing personal experiences and critical analysis.

GOAL 2: ... demonstrate the ability to compose in a variety of modes by developing content, employing specific forms, and selecting language appropriate to a particular audience and purpose.

GOAL 3: ... demonstrate the ability to control language by applying the conventions of standard English in writing and speaking.

MATH:

GOAL 1: ... demonstrate the ability to investigate, interpret, and communicate solutions to mathematical and real world problems using patterns, functions, and algebra.

GOAL 3: ...demonstrate the ability to apply probability/statistical methods for representing and interpreting data and communicating results, using technology when needed.

SCIENCE:

GOAL 1: ... demonstrate ways of thinking and acting inherent in the practice of science. The student will use the language and instruments of science to collect, organize, interpret, calculate, and communicate information.

GOAL 3: ... demonstrate the ability to use scientific skills and processes and major biological concepts to explain the uniqueness and interdependence of living organisms, their interactions with the environment, and the continuation of life on earth.

GOAL 4: ... demonstrate the ability to use scientific skills and processes to explain compositions and interactions of matter in the world in which we live.

Skills for success from High School Core Learning Goals to be Integrated:

GOAL 1: .... plan, monitor, and evaluate his or her own learning experiences.

GOAL 2: ... think creatively, critically, and strategically to achieve goals, make effective decisions, and solve problems.

GOAL 3: ...plan, participate in, monitor, and evaluate communication experiences in a variety of situations.

GOAL 4: understand, apply, and evaluate technologies as labor-enhancing and problem-solving tools.

GOAL 5: ... work effectively with others and participate responsibly in a variety of situations.

Work-based Learning Components:

Related internships and school to work opportunities available to students:

-greenhouse management
-hydroponic design and management
-plant physiology
-nutrient management
-data and computer technician
-food science research
-food service/catering
-production and marketing of vegetables and herbs
-biological research

Expectations of Students: As a result of this project students will:

*...plan, monitor, and evaluate the production of vegetables and herbs in a controlled, healthy environment (Core Learning Goals: Math (1), Sci (1,3,4), Skills F. S.(1)

*...think creatively, critically and strategically to achieve goals, make effective decisions and solve problems related to H_2O quality, fertilizer conversion, water, light and temperature analysis and graphically display results on computer software. (Core Learning Goals: (Math (3), Eng.(2), Sci.(1,3,4),Skills F.S. (2)

*...understand, apply and evaluate technologies through the comparison of altered growing conditions in hydroponic systems. (Core Learning Goals: Math (3), Eng. (1,2), Sci. (1,3,4) Skill F.S.(4)

*...research, present, and evaluate a variety of healthy recipes utilizing the harvested vegetables and herbs. (Core Learning Goals: Math (1), Eng.(1,2,3), Sci.(1), Skills F.S. (3)

*...work effectively with others and participate responsibly to form teams to produce, maintain,harvest, process , prepare and market vegetables and herbs. (Core learning Goals: Sci. (1,3) Skills F.S.(5)

*...plan, participate, and evaluate oral presentations in blended groups to administration, faculty and students. (Core Learning Goals: Math (3), Eng.(2,3) Sci.(1), Skills F.S. (3,5)

*...investigate, understand, and implement technologies as labor-enhancing and problem-solving tools in the career areas of Math, English, Biology, Food Science, Agriculture, and Culinary Arts. (Core Learning Goals: Eng.(1), Sci.(1), Skills F.S. (4)

ANNOUNCEMENT
BLENDED INSTRUCTION GRANTS

Sponsors The University System of Maryland based upon funding from the Maryland State Department of Education (MSDE) under a grant from the Carl D. Perkins Vocational Education Act, Title IIIE Tech Prep.

Purpose To support high school teachers, counselors, industry partners, postsecondary educators and others in the development and implementation of projects for students that integrate the Maryland High School Core Learning Goals, including Skills for Success, and technical skill standards, and/or alignment of academic and career technology education (CTE) curriculum around an industry theme.

The goals of Blended Instruction are to:

- Increase the academic achievement and technical skill level of students;
- Provide challenging assignments and activities that interest and motivate students to use higher-level academic and technical skills;
- Incorporate the Maryland Core Learning Goals, Skills for Success and Technical Skill Standards to prepare students for success in further schooling and careers;
- Provide curriculum that supports the career cluster framework by linking academic content to career interests and real-world applications; and
- Orient other faculty to the use of blended instruction as a way to engage and challenge students.

Eligible Applicants Secondary school-based teams of academic and CTE teachers, school administrators, counselors, postsecondary educators, and industry representatives who meet funding criteria (see Application Criteria). ***Special consideration will be given to school teams that work with postsecondary partners in developing Blended Instruction.***

Number of Awards Fifteen (15) to twenty (20) mini-grants may be awarded to school-based teams (limit of one grant per secondary school).

Amount of Awards Grant awards will range from $1,500 to $2,000 to support planning and implementation of one or two Blended Instruction integrated projects, or curriculum alignment around an industry theme. Awards will be made directly to schools.

Length of Grants **July 1, 2000 - June 30, 2001** *(grant funds will be awarded as of **July 1, 2000**).*

Application Procedures Applicants must complete Parts I and II of the Blended Instruction Grant Application, the Grant Team Checklist, including the required signatures, and the Proposed Budget.

Application Deadline Completed applications must be received by the University System of Maryland by the close of business on **March 31, 2000.** The contact name and mailing address are included on the Grant Application.

Award Notice Grantees will be notified by **May 1, 2000**.

Application Criteria Applicants must meet the following conditions to apply for the grant.
Applicants must:

1. Establish a Blended Instruction team that includes academic and career and technology education (CTE) faculty, postsecondary faculty and additional members which may include high school administrators, counselors and industry representatives. ***Preference will be given to teams that include industry representatives and postsecondary partners.***

2. Include a Team Leader who attended a previous MSDE-Sponsored Blended Instruction Work Session. *If other team members have not attended a previous MSDE Blended Instruction Work Session, they are encouraged to attend the February 10, 2000 session.*

3. Meet as a team to develop and implement one or two blended instruction project(s) or integrate curriculum around an industry theme. Projects should require students to use high-level academic and technical skills that incorporate the Maryland Core Learning Goals, Skills for Success and technical skill standards. Blended Instruction Projects may integrate multiple subject areas and should link at least one academic area (English, mathematics, science and social studies) and one career cluster.

   The ten career clusters identified as critical to Maryland's economic development are:

   - **Consumer Service, Hospitality and Tourism**
   - **Health and Biosciences**
   - **Arts, Media and Communication**
   - **Business Management and Finance**
   - **Human Resource Services**
   - **Transportation Technologies**
   - **Construction and Development**
   - **Manufacturing, Engineering & Technology**
   - **Environmental, Agricultural & Natural Resources**
   - **Information Technology**

4. Provide a preliminary description of at least one Blended Instruction project and/or curriculum alignment plan on the attached Grant Application Part I.

5. Implement one or two Blended Instruction projects and/or align curriculum around an industry theme between **July 1, 2000 and June 30, 2001**.

6. Assess the learning outcomes of the project through an evaluation of the final product or other assessments.

7. Send the Team Leader to participate in the Fall 2000 or Spring 2001 Blended Instruction Workshop (to be announced) as a ***Resource Person*** for teams designing new projects. Team Leaders must also attend a training session at MSDE in Fall 2000 in preparation for their role as a *Resource Person*.

8. Release the results of the grant for distribution to schools throughout the state.

9. Return funds not used in support of the project(s) upon completion of the grant.

Required Reports Grantees must submit a final report (narrative) that summarizes the project(s) and/or curriculum alignment and describe the learning outcomes as a result of the grant activity. Grantees must also submit a financial report, both due to the University System of Maryland by **September 1, 2001**.

Allowable Expenses Funds may be used to pay for planning time, materials, and other expenses. For specific information about allowable expenses, see the attached Proposed Budget Form.

For more information, contact Pat Mikos at (410) 767-0635.

BEST COPY AVAILABLE

BLENDED INSTRUCTION GRANT APPLICATION (Part I)

Instructions: Please complete and submit Parts I and II of the Grant Application, the Grant Team Checklist and the Proposed Budget to ***Ms. Teri Hollander, University System of Maryland Headquarters, Office of Academic Affairs, 3300 Metzerott Road, Adelphi, Maryland 20783, Fax (301) 445-1914****. Deadline for receipt of applications is by the close of business,* ***March 31, 2000****.*

PLEASE PRINT/TYPE

Secondary School Name: _____

Local School System: _____

Select One: ❒ Integrated Project ❒ Industry Theme Curriculum Alignment

Career Cluster – Check (✓) One:

❑ CONSUMER SERVICE, HOSPITALITY AND TOURISM	❑ TRANSPORTATION TECHNOLOGIES
❑ HEALTH AND BIOSCIENCES	❑ CONSTRUCTION AND DEVELOPMENT
❑ ARTS, MEDIA AND COMMUNICATION	❑ MANUFACTURING, ENGINEERING AND TECHNOLOGY
❑ BUSINESS MANAGEMENT AND FINANCE	❑ ENVIRONMENTAL, AGRICULTURAL AND NATURAL RESOURCES
❑ HUMAN RESOURCE SERVICES	❑ INFORMATION TECHNOLOGY

Select Academic Disciplines of High School Core Learning Goals to be integrated:

❒ *English* ❒ *Math* ❒ *Science* ❒ *Social Studies*

Select Skills for Success from High School Core Learning Goals to be integrated:

❒ *Learning* ❒ *Thinking* ❒ *Communication* ❒ *Technology* ❒ *Interpersonal*

Project or Curriculum Alignment Plan Description

Activities: *As a part of this project, students will . . .*

Expectations of Students: *As a result of this project, students will . . .*

Grade Level:

Role of Participating Teachers *(by discipline):*

Work-Based Learning Components:

BLENDED INSTRUCTION GRANT APPLICATION (Part II)

Instructions: Please complete and submit Part I and Part II of the Grant Application, the Grant Team Checklist and the Proposed Budget to ***Ms. Teri Hollander, University System of Maryland Headquarters, Office of Academic Affairs, 3300 Metzerott Road, Adelphi, Maryland 20783****, FAX (301) 445-1914. Deadline for receipt of application is by close of business on* ***March 31, 2000****.*

PLEASE PRINT/TYPE

Secondary School Name: _____

School Address: _____

City and Zip _____ Federal ID # _____

Phone # _____ Fax # _____

Local School System _____

School Team Leader:

1. Name: _____ Title: _____

   Discipline: _____

   Phone: _____ FAX: _____

School Team Members:

2. Name: _____ Title: _____

   Discipline: _____

   Phone: _____ FAX: _____

3. Name: _____ Title: _____

   Discipline: _____

   Phone: _____ FAX: _____

Post Secondary Team Member

4. Name: _____ Title: _____

   Discipline: _____

   Phone: _____ FAX: _____

Industry/Other Team Member

5. Name: _____ Title: _____

   Discipline: _____

   Phone: _____ FAX: _____

BLENDED INSTRUCTION GRANT TEAM CHECKLIST
Conditions for Application

Please complete this form and submit it as part of the Blended Instruction Grant Application and Budget. The signatures below indicate the applicants' acceptance of these requirements.

_____ *(Name of School) agrees to:*

1. Establish or expand an existing team involving at least one academic and one Career and Technology Education (CTE) teacher, one postsecondary faculty member, and additional members that may include high school administrators, counselors, and industry representatives. ***Preference will be given to teams that include industry representatives and postsecondary partners.***

2. Include a Team Leader who attended a previous MSDE-sponsored Work Session on Blended Instruction (*list date attended*). **If other team members have not attended one of the earlier sessions, they are encouraged to participate in the February 10, 2000 workshop. Call Pat Mikos at 410-767-0635 to register a team or team member.**

3. Meet as a team to develop and implement one or two blended instruction projects which incorporate the Maryland High School Core Learning Goals, including Skills for Success, and technical skill standards and/or align curriculum around an industry theme within one of the State's career clusters. ***MSDE staff will be available to provide assistance to grantees in locating technical skill standards.***

4. Implement one or two blended instruction projects that require students to use high-level academic and technical skills and/or align curriculum around an industry theme between **July 1, 2000 and June 30, 2001.**

5. Assess the learning outcomes of the project through an evaluation of the final product or other assessment strategy.

6. Submit a final report and a financial report to the University System of Maryland by **September 1, 2000.**

7. Send the Team Leader to serve as a *Resource Person* at the Fall 2000 or Spring 2001 Work Session on Blended Instruction.

8. Send the Team Leader to participate in the training for work session *Resource People* in Fall 2000.

9. Release the results of the grant for distribution to schools throughout the state.

10. Return funds not used in support of the project(s) upon completion of the grant.

_____ Date: _____
Grant Team Leader Signature

_____ Date: _____
Principal

_____ Date: _____
Local Director of Career and Technology Education

PROPOSED BLENDED INSTRUCTION PROJECT GRANT BUDGET

BUDGET CATEGORIES *(Itemize All Expenses)*	AMOUNT
1. Personnel *Allowable Expenses:* Funds may be used to cover substitute teacher pay or stipends for planning time at current salary per diem. *Prohibited Expenses:* Funds **may not** be used to supplant existing staff salaries of teachers, postsecondary educators or industry representatives.	
2. Fringe Benefits	Not Applicable
3. Travel *Allowable Expenses:* Funds may be used to cover in-state travel expenses for students, teachers, other team members to attend conferences and meetings directly related to Blended Instruction activities and to visit worksites. *Prohibited Expenses:* Funds **may not** be used for out-of-state travel unless prior approval is secured by the University System of Maryland.	
4. Equipment *Allowable Expenses:* Funds may be used to rent equipment related to Blended Instruction activities. *Prohibited Expenses:* Funds **may not** be used to purchase equipment, such as computers.	
5. Supplies *Allowable Expenses:* Funds may be used to cover the cost of copying/printing computer software for instructional purposes and other project materials related to Blended Instruction activities.	
6. Contractual A. Consultant Fees (Daily rate x number of days) B. Catering Fee (Outside provider) *Allowable Expenses:* Funds may be used to pay for consultant fees (daily rate x number of days).	
7. Other *Prohibited Expenses:* Funds **may not** be used to cover indirect, administrative, or overhead costs.	
Total Funds Requested	

Funds are to be used in accordance with Title III, Part E, Tech Prep Education of the Carl D. Perkins Vocational Applied Technology Education Act, Amendments of 1990, Public Law 101-392.

A Resource List for Standards

National Academic Standards:

English

National Council of Teachers of English and International Reading Association. (1996). *Standards for the English Language Arts*. Urbana, IL: Authors.

Geography

Geography Education Standards Project. (1994). *Geography for Life: National Geography Standards 1994*. Washington, DC: National Geographic Research and Exploration.

History

National Center for History in the Schools. (1994). *National Standards for World History: Exploring Paths to the Present*. Los Angeles: Author.

National Center for History in the Schools. (1994). *National Standards for United States History: Exploring Paths to the Present*. Los Angeles: Author.

Math

National Council for Teachers of Mathematics. (1989). *Curriculum and Evaluation Standards for School Mathematics*. Reston, VA: Author. Available online: www.standards-e.nctm.org 1.0 89ces . Draft of revised standards available online: www.nctm.org/standards2000.

Science

National Research Council. (1996). *National Science Education Standards*. Washington, DC: National Academy Press.

American Association for the Advancement of Science (1993). *Benchmarks for Science Literacy*. Washington, DC: Author. Available online: www.aaas.org

Social Studies

National Council for the Social Studies. (1994). *Curriculum Standards for Social Studies: Expectations of Excellence*. Washington, DC: Author.

National Industry Skill Standards

Advanced High Performance Manufacturing

National Coalition for Advanced Manufacturing. (1995). *National Skill Standards for Advanced High Performance Manufacturing*. Washington, DC: Author.

Agricultural Biotechnology

National FFA Foundation. (1994). *National Voluntary Occupational Skill Standards Agricultural Biotechnology Technician*. Madison: Author.

Automobile, Auto Body, and Medium/Heavy Truck

National Automotive Technicians Education Foundation, Inc. (1993). *ASE Program Certification Standards Automobile*. Herndon, VA: Author.

National Automotive Technicians Education Foundation. Inc. (1993). *ASE Program Certification Standards: Collision Repair and Refinish*. Herndon, VA: Author.

National Automotive Technicians Education Foundation. Inc. (1993). *ASE Program Certification Standards: Medium/Heavy Truck*. Herndon, VA: Author.

National Automotive Technicians Education Foundation. Inc. (1995). *Applied Academic and Workplace Skills for Automotive Technicians*. Herndon, VA: Author.

National Automotive Technicians Education Foundation. Inc. (1995). *Applied Academic and Workplace Skills for Collision Repair and Refinish Technicians*. Herndon, VA: Author.

Bioscience
Education Development Center, Inc. (1995). *Gateway to the Future: Skill Standards for the Bioscience Industry*. Newton, Massachusetts: Author.

Chemical Process Industries
American Chemical Society. (1994). *Foundations for Excellence: Voluntary Industry Standards for Chemical Process Industries Technical Workers Draft*. Washington, DC: Author.

Computer-aided Drafting and Design
National Coalition for Advanced Manufacturing. (1994). *National Skill Standards for Computer Aided Drafting and Design* (CADD). Washington, DC: Author.

Electrical Construction
U.S. Electrical Construction Industry Skill Standards and Certification Project. (1995). *Electrical Construction Occupations Handbook Volume I: Electrical Construction Worker*. Bethesda, MD: Author.

Electronics
American Electronics Association Work Force Skills Project. (1994). *Setting the Standard: A Handbook on Skill Standards for the High-Tech Industry*. Santa Clara, CA: American Electronics Association.
The Electronics Industries Association and the Electronic Industries Foundation. (1994). *Raising the Standard: Electronics Technician Skills for Today and Tomorrow*. Washington, DC. Authors.

Grocery
National Grocers Association. (1996). *Front End Associate Standards: National Skill Standards Project*. Reston, VA: Author.
National Grocers Association. (1996). *Stock/Production Associate Standards: National Skill Standards Project*. Reston, VA: Author.

Hazardous Materials Management Technology
Center for Occupational Research and Development. (1995). *National Voluntary Skills Standards for Hazardous Materials Management Technology*. Waco: Author.

Health Care
Far West Laboratory. (1995). *National Health Care Skill Standards*. San Francisco: Author.

Heating, Air Conditioning and Refrigeration
Southern Association of Colleges and Schools, VTECS. (1996). *Skill Standards for Heating, Air Conditioning, and Refrigeration Technicians*. Decatur, GA: Author.

Heavy Highway/Construction and Environmental Remediation
Laborers-AGC Education and Training Fund. (1996). *Concrete Worker Skill Standards*. Pomfret Center, CT: Author.
Laborers-AGC Education and Training Fund. (1997). *Lead Abatement Skill Standards*. Pomfret Center, CT: Author.
Laborers-AGC Education and Training Fund. (1997). *Skill Standards for Open Cut Pipe Laying*. Pomfret Center, CT: Author.

Hospitality and Tourism
Council on Hotel, Restaurant, and Institutional Education. (1995). *Skill Standards: Performance Criteria in the Lodging and Foodservice Industry*. Washington, DC: Author.

Human Services
Human Services Research Institute/EDC. (1996). *The Community Support Skill Standards: Tools for Managing Change and Achieving Outcomes. Skill Standards for Direct Service Workers in the Human Services*. Cambridge: Author.

Industrial Laundry
Uniform and Textile Service Association. (1995). *Skill Standards for Production Workers in the Uniform and Textile Service Industry*. Washington, DC: Author.

Information Technology
NorthWest Center for Emerging Technologies (1997). *Building a Foundation for Tomorrow: Skill Standards for Information Technology*. Bellevue, WA: Author.

Metalworking
The National Tooling and Machining Association. (1994). *Duties and Standards for Machining Skills*. Ft. Washington, MD: Author.

Photonics
Center for Occupational Research and Development. (1995). *National Voluntary Skills Standards for Hazardous Materials Management Technology*. Waco: Author.

Printing
The Graphic Arts Technical Foundation. (199?). *National, Voluntary Skill Standards for (Positions) in the Graphic Communications Industry*. Pittsburgh, PA: Author.

Retail
National Retail Federation. (1994). *Raising Retail Standards*. Rockville, MD: Author.

Welding
American Welding Society. (1995). *Guide for the Training and Qualification of Welding Personnel Entry Level Welder*. Miami: Author.

Workplace Readiness Standards:

The Secretary's Commission on the Achievement of Necessary Skills (SCANS). (1991). *What Work Requires of Schools: A SCANS Report for America 2000*. Washington, DC: U.S. Department of Labor.

Employability Skills Project. (1993). *Employability Skills Assessment Kit*. Lansing, MI: Michigan Department of Education.

Far West Laboratory. (1994). *Career-technical Assessment Program*: Teacher Guidebook. Sacramento: California State Department of Education.

State and Local Standards (selected):

Alaska State Department of Education (1998) *Alaska Department of Education Content Standards*. Juneau, AK: Author.

Maryland State Department of Education. (1995). *High School Assessment Skills for Successful Core Learning Goals*. Draft. Baltimore: Author.

Internet Resources:

www.stc.cahwnet..gov (California School-to-Career Net)

www.stw.ed.gov (National School-to-Work Office)

www.ccsso.org (Council of Chief State School Officers)

www.achieve.org (Achieve, Inc.)

www.mcrel.org (Mid-continent Regional Educational Laboratory)

www.putwest.boces.org/Standards.html (Putnam Valley Central Schools)

www.nssb.org (National Skills Standards Board)

Other Resources:

Baily, Tom and Donna Merritt. (1995). *Making Sense of Industry-Based Skills Standards* (MDS-777). Berkeley: National Center for Research in Vocational Education, University of California at Berkeley.

Hoachlander, Gary. (1994). "Industry-based Education: A New Approach for the Scool-to-Work Transition," *in School-to-Work: What Research Has to Say About It*. Washington, D.C.: U.S. Department of Education, Office of Educational Research and Improvement.

National Board for Professional Teaching Standards. (1994). *Early Adolescence/Generalist Standards for National Board Certification*. Washington, D.C.: Detroit: Author.

The National Council on Education Standards and Testing. (1992). *Raising Standards for American Education*. Washington, D.C.: Government Printing Office.

New Standards. (1995). *Performance Standards: Volume 3 High School*. Consultation Draft. Washington, D.C.: Author.

Tucker, Marc. (1995). *On Occupational Clusters: Early Thoughts on Organizing the Work of the National Skill Standards Board*. New York: National Center on Education and the Economy.

FACT SHEET

MARYLAND CAREER CONNECTIONS

World Class Education That Works

CAREER CONNECTIONS . . . Prepares Students for the Future

Students who participate in school-to-work programs are more likely to get better grades, stay in school, go directly to college, and approach life and work with a positive attitude.
-Report from the National Employer Leadership Council

Career Connections, Maryland's education, workforce preparation, and economic development partnership, is creating a comprehensive system to prepare today's students for the career and educational opportunities of tomorrow. Educators, employers, parents, students and other community leaders are working together to improve curriculum, expand career development, and provide opportunities for students to explore career interests—helping students make informed choices about academics, career pathways, and further education.

Career Connections brings together whole communities to participate in educating tomorrow's citizens. It is a tool for employers to help develop and educate their future workforce, and for educators to engage their communities to help every student succeed.

Career Clusters

The ten career clusters were developed through partnerships between educators and employers and are based on Maryland's unique employment needs.

- *Consumer Service, Hospitality and Tourism*
- *Business Management and Finance*
- *Manufacturing, Engineering Technology*
- *Information Technology*
- *Environmental, Agricultural and Natural Resources*
- *Health and Biosciences*
- *Arts, Media and Communication*
- *Transportation Technologies*
- *Human Resource Services*
- *Construction and Development*

CAREER CONNECTIONS . . . Expands Students' Opportunities

Career Connections aims to expose students to the career and further education opportunities open to them. It promotes higher levels of achievement by making learning meaningful to students.

Through Career Connections, students experience rigorous and challenging classroom instruction linked to relevant, structured, real-world work experiences such as internships and mentoring. Students learn from business and industry leaders what is expected from them in the workforce and see how classroom learning applies directly to the world of work. They are also introduced to a variety of career options and learn the levels of skills and education required for those careers and to pursue further education. In short, students leave school better prepared for-and more focused about-their choices for further education and employment.

CAREER CONNECTIONS . . . The Goals

By the year 2000:

- The percentage of students who are employed, pursuing further training, and/or enrolled in postsecondary education within one year of graduation will at least equal the employment rate of the Maryland region from which they graduated.
- At least 92% of the students employed immediately after graduation will meet or exceed entry-level occupational skill requirements as reported by employers.
- The grade-point average of the Maryland high school graduates enrolled in postsecondary institutions will exceed 2.5 based upon a 4.0 scale during their freshman year.

CAREER CONNECTIONS . . . Is For All Students

Career Connections gives all students a head start on a better future. Whether moving on to further education or employment, every Maryland student will participate in course work linked to their career interests, a process for career development, work experiences, and guidance for the many choices after high school.

BEST COPY AVAILABLE

CAREER CONNECTIONS ... Benefits The Entire Community

Students-

- Opportunities to explore different career and continuing education plans.
- Valuable knowledge of career choices and their skill/education requirements.
- Career counseling/assistance in developing career and educational paths.
- The chance to learn and apply academics in classrooms and workplaces.

Employers-

- Access to well prepared employees with high academic achievement and work experience.
- Involvement in the development of curriculum.
- Lower costs for employee training and recruiting.
- Opportunities to raise the quality of life for the community.

Educators-

- Increased graduation, college placement, and employment rates for students.
- Opportunities for professional development, technical assistance, training and support.
- Learning made more exciting and relevant for students.
- Curriculum designed to blend academic and career education.

Parents-

- Knowledge that students are better prepared for their next educational level and career opportunities.
- More motivated students who are more likely to stay in school and achieve economic independence.
- Assurance that students will graduate with a sense of purpose and direction.

CAREER CONNECTIONS ... System Structure

In an increasingly global economy where workforce quality and skills levels are critical factors in achieving success, American business requires a world-class workforce if we are to continue to lead the world's economy.
-Ed Rust, President/CEO, State Farm Insurance Companies

State Level: A Career Connections State Management team representing state agencies, education, business, organized labor, and local communities provides overall policy guidance and management.

Regional Level: Twelve Local Labor Market Teams (LLMTs) composed of employers,educators, and labor and community agency representatives provide regional leadership and grant administration.

Local Level: School Improvement Teams (SITs) work with their LLMTs to implement the Career Connections system in local schools.

CAREER CONNECTIONS ... Employer Involvement Fund

We have got to abolish the line between what is academic and what is vocational and learning, and we've got to abolish the line between school and work. Learning is now going to be a lifetime endeavor, and learning should be seen as a dignified form of work...

-President Bill Clinton

Career Connections grants are awarded at the local level to employers/labor groups to help underwrite the initial costs of providing high-level work-based learning experiences for students exploring their career pathways.

Career Connections ... Contact Information

Career Connections
200 West Baltimore Street
Baltimore, Maryland 21201-2595
Phone: (410) 767-0170
Fax: (410) 333-2099

BEST COPY AVAILABLE

Local Labor Market Teams

Anne Arundel County LLMT
Dr. Thomas Miller
Director of Career & Technology Education
Anne Arundel County Public Schools
2644 Riva Road
Annapolis MD 21401
Work Phone: (410) 222-5490
Fax Number: (410) 222-5469
Email Address: tmilleraacps@hotmail.com

Baltimore City LLMT
Dr. Cheryl Jones
Director of Career & Technology Education
Baltimore City Public Schools
200 E. North Avenue RM317
Baltimore MD 21202
Work Phone: (410) 396-8556
Fax Number: (410) 396-8491
Email Address: chjones@bcps.k12.md.us

Baltimore City LLMT
Ms. Karen Sitnick
Youth Commonwealth Services
101 W. 24th Street STE 300A
Baltimore MD 21218
Work Phone: (410) 396-6722
Fax Number: (410) 467-7869
Email Address:

Baltimore City LLMT
Ms. Pamela Heard
FAC Supervisor
Baltimore City Public Schools
200 E. North Avenue
Baltimore MD 21202
Work Phone: (410) 396-8556
Fax Number: (410) 396-8491
Email Address: cjones@bcps.k12.md.us

Baltimore County LLMT
Mr. Ed Fangman
Coordinator
Baltimore County Office of Employment and Training
One Investment Place STE 409
Towson MD 21204
Work Phone: (410) 887-3941
Fax Number: (410) 887-5673
Email Address: efangman@co.ba.md.us

Baltimore County LLMT
Ms. Terry Babiooch
Administrator
Baltimore County Office of Employment and Training
One Investment Place STE 409
Towson MD 21204
Work Phone: (410) 887-4357
Fax Number: (410) 887-5673
Email Address:

Frederick County LLMT
Ms. Bonnie Gahn
Director of Youth Connections
Frederick Job Training Agency
520 N. Market Street
Frederick MD 21701
Work Phone: (301) 631-3555
Fax Number: (301) 696-2906
Email Address: Bonnie_Gahn@co.frederick.md.us

Frederick County LLMT
Mr. David Miller
Assistant Superintendent for
Career & Technology Education and Business Partnerships
Frederick County Public Schools
115 East Church Street
Frederick MD 21701
Work Phone: (301) 694-1383
Fax Number: (301) 694-1350
Email Address: David_Miller@co.frederick.md.us

Lower Shore LLMT
Mr. Fred Smith
Career Connections Facilitator
Worcester County Board of Education
6270 Worcester Highway
Newark MD 21841
Work Phone: (410) 632-2582 X295
Fax Number: (410) 632-0364
Email Address:

Lower Shore LLMT
Mr. Mike Pennington
Executive Director
Lower Shore Private Industry Council
POB 99
Snow Hill MD 21863
Work Phone: (410) 632-3300
Fax Number: (410) 632-1466
Email Address:

Local Labor Market Teams

Mid-Maryland LLMT
Ms. Paula Blake
Career Connections Specialist
Howard County Public Schools
10910 Route 108
Ellicott MD 21042
Work Phone: (410) 313-6681
Fax Number: (410) 313-6839
Email Address: Pblake@mail.howard.k12.md.us

Mid-Maryland LLMT
Ms. Dorothy Lehman
Mid-Maryland SDA Administrator
Howard County Employment & Training
10650 Hickory Ridge Road
Columbia MD 21044
Work Phone: (410) 313-4600
Fax Number: (410) 313-7383
Email Address:

Mid-Maryland LLMT
Ms. Meg Gerety
Howard County Public Schools
10910 Route 108
Ellicott MD 21042
Work Phone: (410) 313-6690
Fax Number: (410) 313-6839
Email Address: mgerety@mail.howard.k12.md.us

Mid-Maryland LLMT
Mr. Robert Glascock
Coordinator
Howard County Staff Development Center
Office of Gifted and Talented Programs
12598 Marble Faun Court
Columbia MD 21044
Work Phone: (410) 313-6668
Fax Number: (410) 313-6839
Email Address:

Mid-Maryland LLMT
Ms. Denise Beaver
Manager
Carroll County Business & Employment Resource Center (BERC
224 N. Center Street
Westminster MD 21157
Work Phone: (410) 876-9556
Fax Number: (410) 876-2977
Email Address:

Mid-Maryland LLMT
Ms. Marjorie Lohnes
Supervisor of Career and Technology Education
Carroll County Public Schools
125 North Court Street
Westminster MD 21157
Work Phone: (410) 751-3104
Fax Number: (410) 751-3159
Email Address: mlccps@ccpl.carr.lib.md.us

Montgomery County LLMT
Ms. Roberta Shulman
President
Montgomery County Workforce Development Corporation
451 Hungerford Drive STE 515
Rockville MD 20850
Work Phone: (301) 738-0015
Fax Number: (301) 738-8792
Email Address:

Montgomery County LLMT
Mr. Barry Burke
Director
Montgomery County Public Schools
Division of Career and Technology Education
850 Hungerford Drive
Rockville MD 20850
Work Phone: (301) 279-3567
Fax Number: (301) 279-3399
Email Address: barry_burke@fc.mcps.k12.md.us

Prince George's County LLMT
Mr. Arthur Curry
Program Director
Prince George's County Career Connections
7700 Old Branch Avenue STE E203
Clinton MD 20735
Work Phone: (301) 856-4550 x201
Fax Number: (301) 856-4805
Email Address: Careers@pgcps.pg.k12.md.us

Prince George's County LLMT
Ms. Sandra Rawlings
Director of Curriculum and Instruction
Prince George's County Public Schools
9201 East Hampton Drive
Capital Heights MD 20743
Work Phone: (301) 808-8240
Fax Number: (301) 808-8291
Email Address: Phoellich@pgcps.org

Local Labor Market Teams

Prince George's County LLMT
Mr. Joseph Puhalla
President
Prince George's County Private Industry Council
1802 Brightseat Road
Landover MD 20785
Work Phone: (301) 386-5522 x415
Fax Number: (301) 386-5533
Email Address:

Southern Maryland LLMT
Ms. Andrea L. Smith
Dean of Career & Technical Education
Charles County Community College
POB 910 Mitchell Road
LaPlata MD 20646-0910
Work Phone: (301) 934-7538
Fax Number: (301) 934-7698
Email Address: anns@charles.cc.md.us

Southern Maryland LLMT
Ms. Janet Hanke
CC/Tech Prep Manager
St. Mary's County Technical Center
24005 Point Lookout Road
Leonardtown MD 20650
Work Phone: (301) 475-0242
Fax Number: (301) 475-0245
Email Address: jhanke@mail.smcps.k12.md.us

Southern Maryland LLMT
Ms. Elaine Lancaster
Activities Specialist
Southern MD Career Connections Partnership
F.B. Gwynn Center
5998 Radio Station Road
LaPlata MD 20646
Work Phone: (301) 609-4527
Fax Number: (301) 934-3639
Email Address:

Susquehanna Region LLMT
Dr. Laura Spada
Instructional Coordinator
Cecil County Public Schools
900 Northeast Road
North East MD 21901
Work Phone: (410) 996-6291
Fax Number: (410) 996-6297
Email Address: lspada@ccpc.org

Susquehanna Region LLMT
Dr. William Securro
Supervisor of Career & Technology Education
Harford County Public Schools
45 East Gordon Street
Belair MD 21014
Work Phone: (410) 838-7300 x239
Fax Number: (410) 638-4313
Email Address: No E-Mail

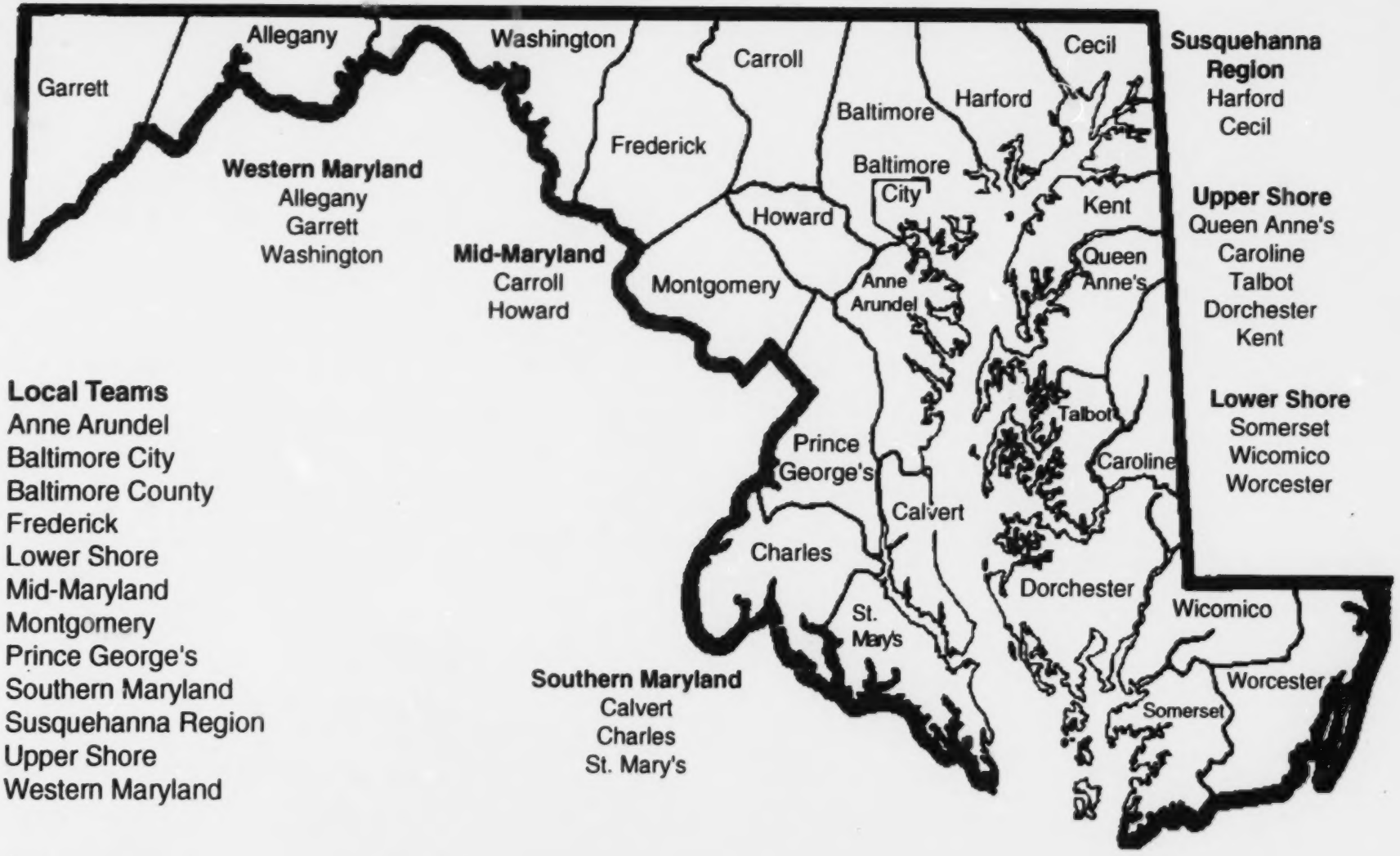
Susquehanna Region LLMT
Ms. Linda Siegel
In-School Coordinator
Susquehanna Region Private Industry Council
410 Girard Street
Havre de Grace MD 21078
Work Phone: (410) 939-4240
Fax Number: (410) 939-5171
Email Address:

Upper Shore LLMT
Mr. Ed Roebuck
Coordinator/Tech Prep Steering Committee
Chesapeake College
Upper Shore Workforce Development Board
POB 8
Wye Mills MD 21679
Work Phone: (410) 763-9105
Fax Number: (410) 827-4285
Email Address: eroebuck@chesapeake.edu

Western Maryland LLMT
Mr. Frank Peto
Executive Director
Regional Education Service Agency
127 South Smallwood Street
Cumberland MD 21502
Work Phone: (301) 777-3525
Fax Number: (301) 777-5982
Email Address:

Western Maryland LLMT
Mr. Fred Jacobs
Regional Coordinator/Tech Prep Coordinator
Washington County Board of Education
POB 730
820 Commonwealth Avenue
Hagerstown MD 21741
Work Phone: (301) 766-2800
Fax Number: 301-791-2957
Email Address: jacobfre@mail.wcboe.k12.md.us

Maryland's Local Labor Market Teams



Local Teams
Anne Arundel
Baltimore City
Baltimore County
Frederick
Lower Shore
Mid-Maryland
Montgomery
Prince George's
Southern Maryland
Susquehanna Region
Upper Shore
Western Maryland

BEST COPY AVAILABLE